HORSES, DOGS, BIRDS, CATTLE.

ACCIDENTS AND AILMENTS

FIRST AID

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PREFACE.

THE information contained in the following pages is offered as likely to be of assistance in the treatment of such Animals as are indicated by the Title Page, in some instances probably ensuring a complete cure, or at all events a reduction of disease and alleviation of injuries. Such treatment will be more effectual through the proper mode of application of Elliman's Embrocation being known, and in these pages it is rendered clearer than is possible in a paper of Directions wrapped round a bottle.

It will be apparent that Elliman's Embrocation is not recommended as the sole and exclusive treatment necessary in every case. The decision as to what cases require the services of a Veterinary Surgeon must be left to the discretion of the Owner of the Animal.

The one aim of the Book is to treat of Ailments where Elliman's Embrocation can be usefully employed, and to offer other information which may be of service.

THE USES OF ELLIMAN'S.

ELLIMAN'S EMBROCATION, owing to its antiseptic properties, can be used with advantage in the treatment of wounds, or abrasions of the skin, when diluted one part Elliman's to ten parts water (see pp. 37, 38, 54, 97).

AS AN EMOLLIENT when hand-rubbing or massage is necessary to promote circulation in cold extremities (see p. 53).

AS A MILD STIMULANT or rubefacient when slight swellings have to be dispersed, and in the treatment of bruises or slight sprains (see p. 39).

AS A COUNTER IRRITANT when a blistering action is required, as in the treatment of chronic inflammation, thickened ligaments, old standing enlargements, bony growths. The action of Elliman's as a counter irritant is greatly increased by previously fomenting the part with hot water (see Ring-Bone, p. 61).

THE SKIN OF HORSES, it must be borne in mind, varies in thickness and sensitiveness in the different breeds, and in the different parts of the same animal. In a thoroughbred, and well-bred horses, the skin is much thinner than it is in the common breeds.

THE SKIN OF CATTLE is much thicker and less sensitive.

THE SKIN OF THE DOG is so very sensitive, that dogs should not be treated in the same manner as other animals; also it is very absorbent, hence in that animal a larger surface than is necessary should not be treated, nor a large quantity of the Embrocation used at one time, about the body in particular. When rubbing is indicated, it should be done gently.

IN THIS BOOK the proper use of Elliman's is indicated in each case.

Copyright. A SOUND HORSE OF GOOD STAMP STANDING WELL.

THE USES OF

PARIS EXPOSITION, 1900. SILVER MEDAL.
The Highest Award given to any Veterinary Product.

Elliman's Embrocation

FOR

HORSES, DOGS, BIRDS, CATTLE.

FIFTH EDITION, 1906.
Completing 320,000 Copies.

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The French and Belgian Societies for the Protection of Animals have awarded Silver Medals for the French Edition of this work.

"Premiers Secours aux animaux Malades et Blessés."

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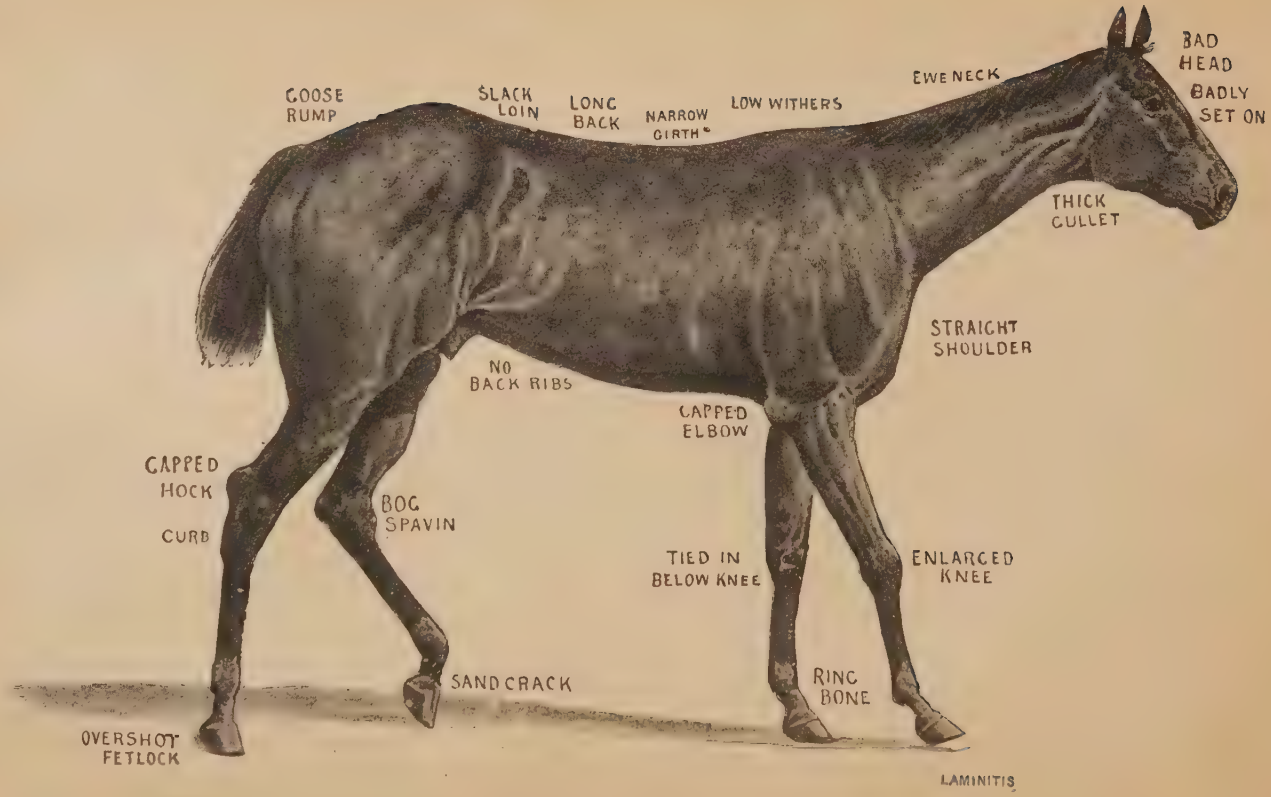

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A BAD UNSOUND HORSE

Strangles. On page 69, at top, read:- Foment the swelling for half an hour with hot water twice a day, then . .

PART I.

HORSES.

SPRAINS IN GENERAL.

Some structures of the horse are elastic, whilst others of them are almost incapable of being strained. The majority of the ligaments and the tendons are not elastic; they are of a definite and fixed length, and, if made to stretch beyond their length, some of their fibres become ruptured and they give way in part; this is one reason of sprain. All the time the power is exerted in the direction it was intended to take, the strength of a tendon is incalculable and marvellous. When a horse leaps over a fence, as he lands there is a second of time when all the weight of both himself and his rider has to be borne on one leg.

During this time there is probably something like a ton weight on two of the principal ligaments and the tendons, allowing of course for the impetus and drop on the far side of the jump.

This may be repeated many times in a day without injury, but let the horse hesitate, or land with a twist, or on a stump that gives a turn to his leg, and the most disastrous strain may result.

The explanation is this—the tendon, or ligament, which by its office resembles a tendon, is composed of hundreds of distinct

SPRAINS
IN
GENERAL.
A SECOND OF TIME
WHEN ALL THE WEIGHT
OF BOTH HIMSELF
& RIDER HAS TO BE
BORNE ON ONE LEG.

fibrils; these are welded together on the principle of a bundle of sticks, which can bear a greater strain than a solid piece of wood can of the same weight. The ends where tendons and ligaments are attached to bones spread out, fan-like, and thus obtain a wider "insertion," as it is called. A twist or semi-circular movement, when the structure is already "taut," results in a stretching of some fibres or an injury less severe than actual rupture, but still a sprain or strain.

There is every degree of sprain, from a slight over-extension to absolute division and complete breakdown; but the principle is everywhere the same, and this is what we wish to make clear.

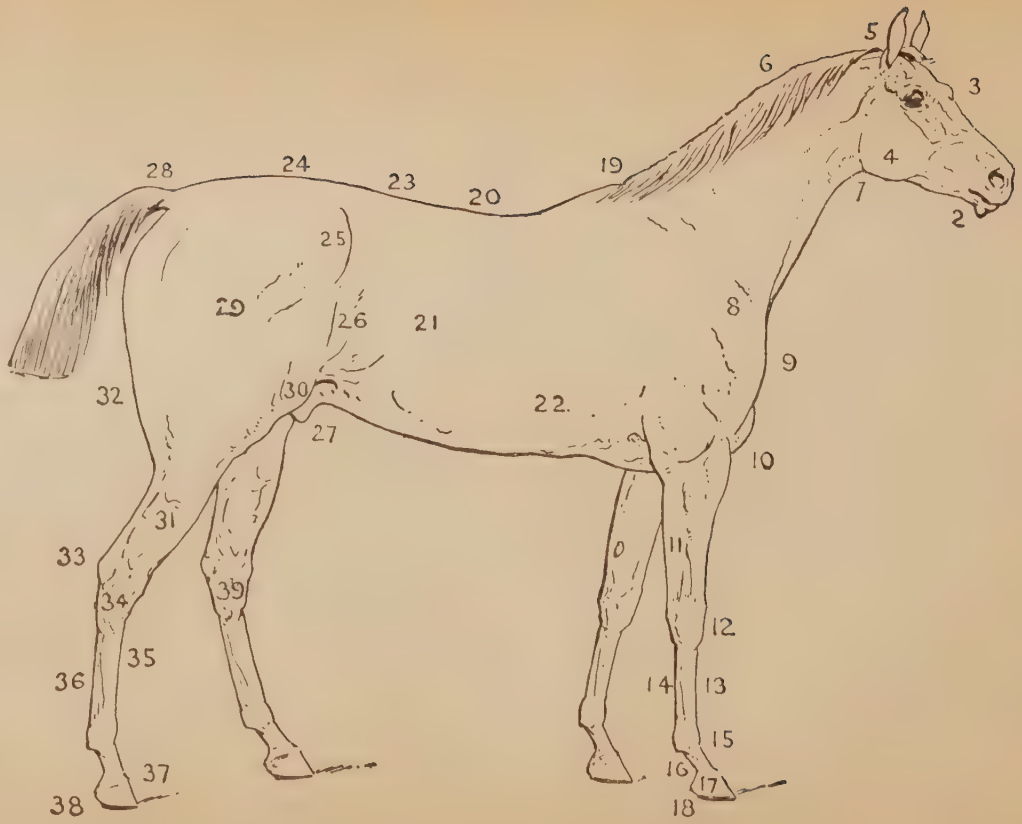
There is a class of sprains which to any but surgeons seems quite inexplicable. Such strains are not the result of a drop jump, or a twist, or of a treading upon a stone, nor are they caused by concussion or by any of those means usually classed as accidents, but they are due to muscular fatigue.

Take an example from the hunter, or the draught-horse fetching sand from the sea-shore. One may be going steadily through deep, soft ground, and the other walking through equally soft but even looser sand. A sprain occurs low down on the leg, and why? The muscles, owing to fatigue, have failed to contract, and the tendons (which are only the pulleys acted on by muscles) are allowed to remain on the stretch too long

Tendons and ligaments, like every other part of the body, derive their nutriment from blood and their sensation from nerves. When a sprain occurs the nerves are stretched or torn, hence the great pain which is caused in severe cases. If the blood vessels are broken, an escape into the substance of the injured member causes rapid enlargement. If only stretched, these vessels are excited and an increased amount of blood is sent to the part;

INFLAMMATION IS SET UP;

the part appears swollen and feels hot. Pain is evinced on pressure; suffering follows upon exertion.



POINTS OF THE HORSE.

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POINTS OF THE HORSE.

1.—Muzzle.
2.—Chingroove.
3.—Forehead.
4.—Jaw, lower.
5.—Poll.
6.—Crest.
7.—Windpipe.
8.—Shoulder blade.
9.—Point of shoulder.
10.—Breast.
11.—Fore-arm.
12.—Knee.
13.—Cannon bone.
14.—Back tendons.
15.—Fetlock.
16.—Pastern.
17.—Hoof.
18.—Heel.
19.—Withers.
20.—Back.
21.—Back Ribs.
22.—Girths.
23.—Loins.
24.—Croup.
25.—The Hip.
26.—The Flank.
27.—The Sheath.
28.—Root of Dock.
29.—Hip joint, or round bone.
30.—Stifle Joint.
31.—Second thigh or gaskin.
32.—The Quarters.
33.—The Hock.
34.—Curb place.
35.—Cannon bone.
36.—Back tendons.
37.—Coronet.
38.—Heel.
39.—Spavin, position of.

LAMENESS, HEAT, PAIN AND SWELLING

are the chief indications of sprain. These symptoms vary in intensity according to the situation of the structure affected and the extent of the mischief.

By cultivating the habit of feeling the horse's legs in health, the hand will know directly it comes across a sprain, without causing the sufferer to wince under pressure. A sprain having occurred, the process adopted by nature to cure it is by bringing to the part a largely increased supply of blood, from the elements of which new material is selected to repair the breach. To understand how Elliman's acts, it is necessary to consider the structure of the skin, through whose agency every external remedy must operate.

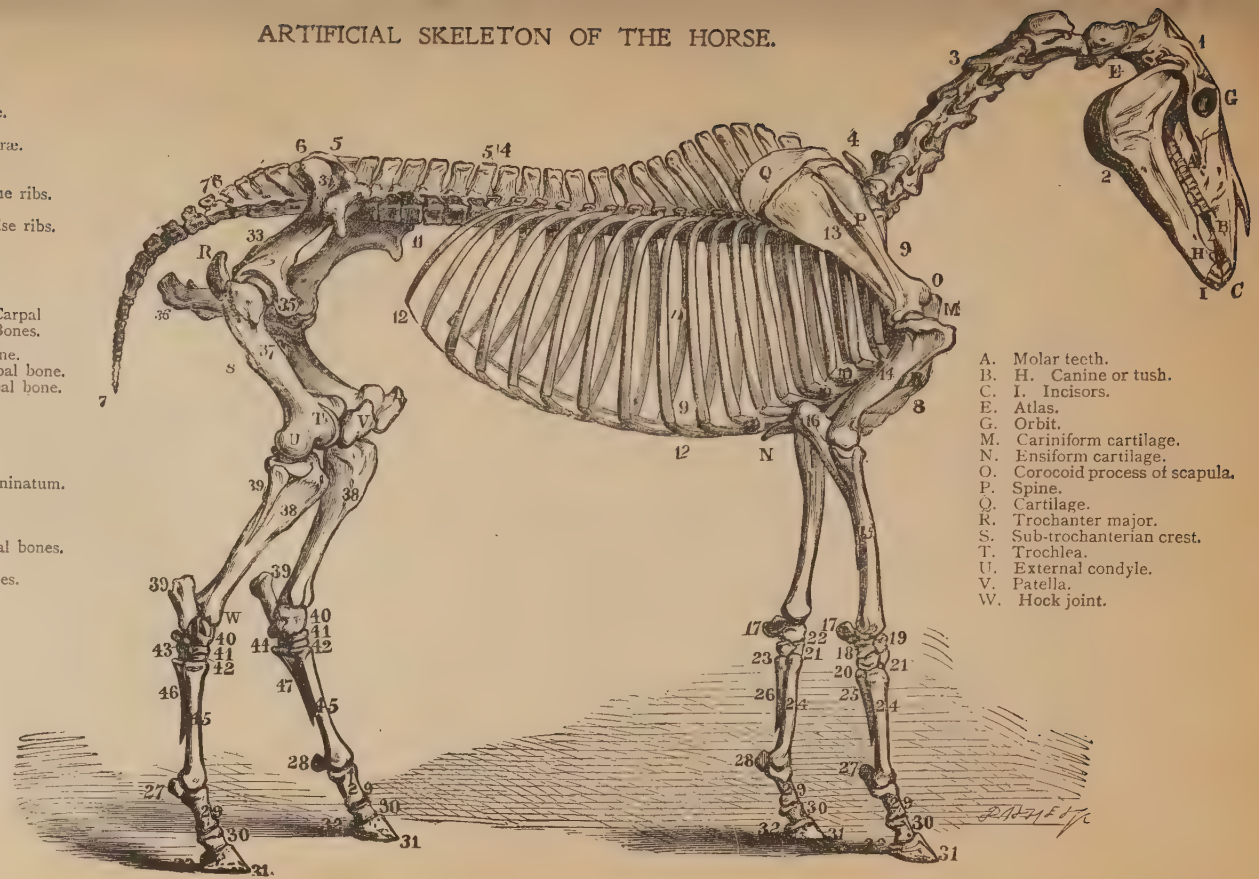
The outer layer is insensitive, and consists of piled-up layers or thin scales which from time to time peel off. Under this are other layers of true skin, and among them there exists a network of blood vessels and nerves. It is through the latter that Elliman's exercises its far-reaching effect. The nerves of the skin terminate in a form resembling numerous minute cauliflowers. These all communicate with the larger trunks which govern the seat of inflammation. When injured the small vessels are paralysed more or less, their calibre not been regulated, on account of injury sustained by the nerves which accompany them, and which in health compress or relax to admit less or more blood. In sprain there is an engorgement of the parts so affected.

ELLIMAN'S,

by acting on the peripheral nerves (the cauliflower-like extremities), restores them to their proper functions, and so acts upon the blood supply; the injured part is no longer flooded with blood of which it can make no use; the source of inflammation is controlled; the blood already in the part is put to work, and recuperative action begins at once.

ARTIFICIAL SKELETON OF THE HORSE.

1. Cranium.
2. Lower jaw.
3. Cervical vertebræ.
4. 4. Dorsal vertebræ.
5. 5. Lumbar vertebræ.
6. 6. Sacrum.
7. 7. Coccygeal vertebræ.
8. Sternum.
9. 9. True ribs.
10. 10. Cartilages of true ribs.
11. 11. False ribs.
12. 12. Cartilages of false ribs.
13. Scapula.
14. Humerus.
15. Radius.
16. Elbow.
17. Os pisiforme. } Carpal
18. 19, 20, 21, 22, } Bones.
23.
24. Large metacarpal bone.
25. Outer small metacarpal bone.
26. Inner small metacarpal bone.
27. 28. Sesamoid bones.
29. Os suffraginis.
30. Os coronæ.
31. Os pedis.
32. Wing of pedal bone.
33. 34, 35, 36. Os Innominatum.
37. Femur.
38. Tibia.
39. Os calcis. } Tarsal bones.
40. Astragalus. }
41. 42, 43, 44.
45. Large metatarsal bones.
46. Outer small ditto.
47. Inner small ditto.



A. Molar teeth.
B. H. Canine or tush.
C. I. Incisors.
E. Atlas.
G. Orbit.
M. Cariniform cartilage.
N. Ensiform cartilage.
O. Corocoid process of scapula.
P. Spine.
Q. Cartilage.
R. Trochanter major.
S. Sub-trochanterian crest.
T. Trochlea.
U. External condyle.
V. Patella.
W. Hock joint.

Copyright.

The absorbents are thus roused to activity, whilst the broken-down tissue is dissolved and carried away.

In the next place, the Elliman's draws to the surface the inflammation, which in a joint or tendon would continue to do irreparable mischief.

SPRAINED SHOULDER.

This injury is generally the result of turning the animal suddenly. Colts sometimes sprain the shoulder at grass when galloping about and making sharp and sudden turns. Hunters are the most liable to it, but harness horses get shoulder sprains in turning on uneven ground which they cannot see. Young farm horses, when first put to plough, are frequent subjects of shoulder lameness until they become accustomed to inequalities of ridge and furrow. Bruised shoulder is often mistaken for sprain, and may be caused by the horse knocking against a door or gate post when it is startled, or when several horses are squeezing through an opening at the same time.

Treatment.—Ascertain the nature and extent of the trouble as far as possible by manipulating the parts, lifting the limb, *i.e.*, press all round with the knuckle, move the leg backwards and forwards, and observe the position in which the animal most readily flinches. With shoulder troubles it is always a beneficial plan to begin with a good fomentation of hot water twice or three times daily; this eases pain and prepares the way for the Elliman's. Shoulder lamenesses differ from those lower down in either limbs, inasmuch as the muscles are nearly always affected, while there are no muscles below the knee and hock.

"YOUNG FARM HORSES WHEN FIRST PUT TO PLOUGH."

"GATES SHOULD BE SET WIDE OPEN BEFORE COLTS ARE ALLOWED TO RUSH THROUGH."

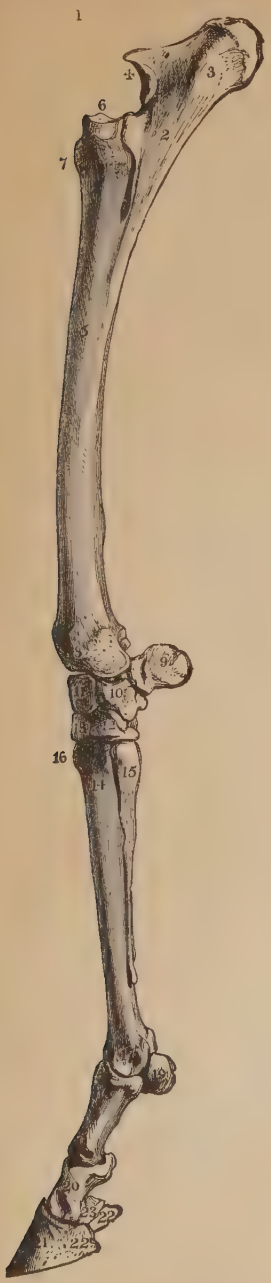
HOT WATER FOMENTATION.

A word here about hot water. This is often used too hot, which may cause bad blemishes, not to mention the unnecessary suffering given to animals by such use. Whenever hot water is referred to in this book, it is intended to mean just as hot as a man can comfortably bear his *elbow* in; the hand of those engaged in manual labour being usually much less sensitive than the skin of the horse. After fomenting for half an hour, rub in Elliman's with both hands, changing the attitude of the horse from time to time, flexing and extending the limb by turns. An extra piece of rug or flannel may be stitched inside the rug covering the lame shoulder. On subsequent days the Elliman's may be diluted with an equal amount of soft water, and the treatment continued until the horse is well. If there is no improvement, it will be due to some other cause than sprain, and a veterinary surgeon should be consulted, as there may be disease of the shoulder. Navicular disease of the foot is a complaint which is often mistaken for shoulder lameness.

Prevention.—The chief causes of injury have been enumerated, and the reader will see that some of them are preventable. If horses must be led in and out of the stable with winker-bridles on, they should be led slowly by the attendant taking hold of both sides of the bridle and backing in or out in front of the horse. Gates should be set wide open before colts are allowed to rush through them. Special care should be exercised with nervous horses, and, whether riding or driving, sudden twists and turns should be avoided.

ELBOW LAMENESS.

(See Capped Elbow, p. 39.)



BONES OF THE FOREARM, KNEE, CANNON, PASTERNS, AND FOOT.

1. Semicircular fossa formed by the radius and ulna for the elbow joint.
2. Body of the ulna.
3. Olecranon process.
4. Articulating surface.
5. Body of the radius.
6. Surface articulating with the condyle of the humerus.
7. Tubercle to which the coraco-radialis muscle is attached.
8. Articulatory surfaces corresponding to the upper row of knee-bones.
9. Os Pisiforme.
10. — cuneiforme.
11. — lunare.
12. — unciforme.
13. — magnum.

} Bones of the knee.

14. Metacarpas or cannon bone.
15. External small metacarpal bone.
16. Tubercle to which the tendon of the muscle (extensor metacarpi magnus) is attached.
17. Joint uniting with the os suffraginis.
18. Os suffraginis.
19. External sesamoid bone.
20. Os coronæ.
21. Os pedis.
22. Wings of pedal bone.
23. Os navicular.

INJURIES TO THE KNEE.

The double row of small knee-bones, with the large ones above and below, all go to make up the joint. In the

FORE VIEW OF THE CARPAL BONES, COMMONLY CALLED THE KNEE.

2. Lower extremity of radius.
3. Ulna, lower extremity of.
4. Os pisiforme.
5. — cuneiforme.
6. — lunare.
7. — scaphoides.
8. — unciforme.
9. — magnum.
10. Large metacarpal bone.
11. Small metacarpal bone.

large number of bones its safety consists; these are not a cause of danger, but serve to distribute concussion, and so it comes about that the most complicated joint in the body is

least often the seat of lameness, save for one particular cause, as follows:—

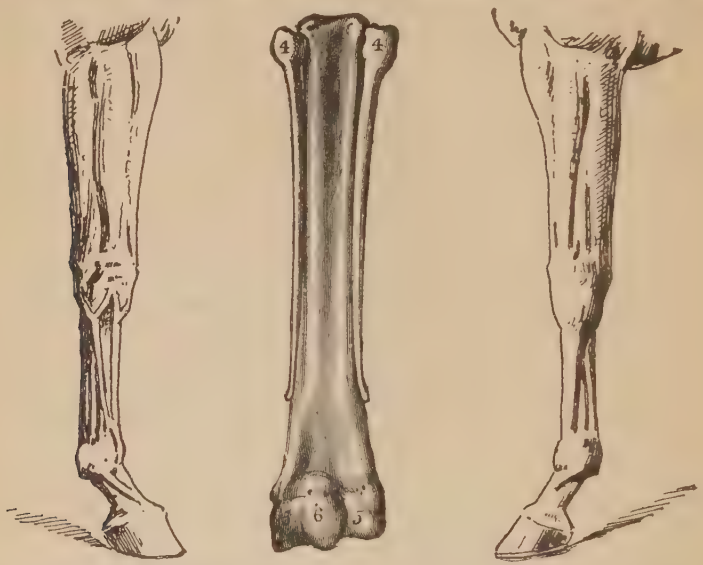
SPRAIN OF THE KNEE.

It is difficult, indeed, to define which of the numerous ligaments is affected when this joint suffers · but if we can ascertain

The dotted lines show the direction in which the sprained tendons and ligaments bulge and alter the shape of the knee.

on which side the greatest amount of tenderness exists, we are able to apply a remedy with more certainty, and need not cover so much ground. Of one thing we may be sure, no matter what structures are involved, and that is this, that Elliman's is the remedy. Knee lameness generally results from a fall, but sometimes a growth into or upon the joint may cause it. The lameness is more likely to be caused by a fall than by a high splint creeping up from below. Such a thing, however, may occur. The other cause of knee lameness is from within (see RHEUMATISM, p. 52). Between the knee and foot occur the largest number of sprains and other injuries demanding the use of Elliman's. The powerful binding ligaments on the knee, and the tendons passing to the

side and back of knee or leg, and the corresponding structures in the hind limb, that is, of course, below the hock, are frequent subjects of sprain. Those passing towards the front of the limb are the extensors, and are seldom sprained in comparison with the back tendons—as the ligaments, as well as tendons, are commonly called. The two back tendons are called *perforans* and *perforatus*, because at the back of the fetlock one opens and the

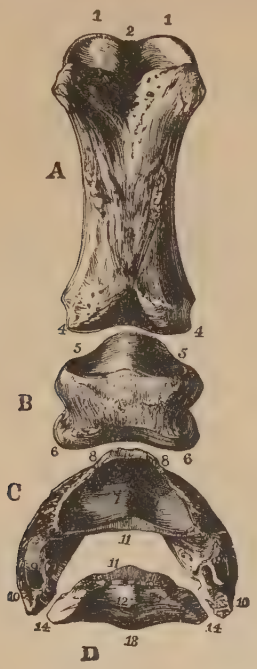


THE CENTRE BLOCK SHOWS BACK VIEW OF THE LARGE AND SMALL METACARPAL BONES.

2. Metacarpus magnus.
3. The surfaces above articulate with the lower carpal bones.
4. 4. External and internal small metacarpal bones.
5. 5. Condyloid surfaces articulating with corresponding ones on the upper extremity of the os suffraginis.
6. Eminence articulating with a corresponding depression on the upper extremity of the os suffraginis.

other passes through it. The *perforans* tendon, which is the anterior one, is joined two or three inches below and behind the knee-joint by a very powerful ligament known as the check-ligament—the presence of this ligament explains the fact why a horse can go to sleep standing. The suspensory ligament is a little lower down. The fetlock, like the knee, is bound down with ligamentous bands of great strength; these are seldom the seat of sprain, but the sheaths of the tendons which pass over the fetlock joint are often in need of treatment.

Below the fetlock are the continuations of the tendons and the ligaments which have their origin at or above the knee. They descend to the bone of the foot, and are inserted into the



Posterior View of Phalanges.

A. Os suffraginis.
1. 1. Surfaces articulating with the lower extremity of the large metacarpal bone.
2. Groove.
3. Rough surface for the implantation of ligaments.
4. 4. Inferior extremity articulating with
B. Os coronæ.
5. 5. Superior articulatory surfaces.
6. 6. Inferior articulatory surfaces.
C. Os pedis.
7. 7. Articulatory surfaces.
8. 8. Coronal process.
9. 9. Scutiform processes.
10. 10. Retrossal processes.
11. Surface articulating with a corresponding one on the navicular bone (12).
D. Os naviculare.
12. Surface articulating with the os coronæ.
13. Surface over which the flexor pedis perforans tendon glides.
14. 14 Points attached to the pedal bone by ligaments.

roughened eminences which gives this form of attachment so much strength, but, as pointed out in Sprains in General (p. 13), the spreading makes a twist or sudden turn, the most likely cause of sprain.

In reading the directions for treatment that follow, it should be borne in mind that, in case of

A VERY SEVERE SPRAIN WITH MUCH HEAT,

it is advisable to commence by letting a stream of cold water play on the limb for ten minutes three or more times a day, until the inflammatory symptoms have subsided. A cold-water bandage may be used, and this should be changed as may be necessary. When the inflammation is reduced, the Elliman's should be rubbed in with the hand for ten minutes three times a day, and the limb bound with a cold-water bandage. The cold-water bandage will cause the Elliman's to act as a very slight blister, which will reduce the thickening or enlargement; after a day or two, when a slight scurf is raised, substitute a layer of cotton wool with a tight bandage over it for the wet one.

In case of a severe sprain, where the horse shows a disposition to walk on the toe of the lame limb, a high-heeled shoe may be put on, so as to remove all tension from the ligaments and tendons.

SPRAIN OF THE BACK TENDONS.

This is one of the commonest of the causes of lameness in horses, and is most frequent in hunters, though common enough to all classes. The concussion of landing over a jump puts the strain on, which gives rise to injury of these tendons. Race-horses also break down in the back tendons, even though racing on the flat, but in their case it is from fatigue of muscle in the majority of instances. The same may be said of the hack and the harness horse; horses are always liable to make an unlucky stumble, or, treading upon a stone, they put an unequal and severe strain on these structures. It is important to examine the injury as soon as possible after the accident, to ascertain its extent, before effusion of fluid and swelling deceive the eye and

hand. In a severe strain, some say it is a good plan to give a dose of physic to keep down inflammation and reduce the tendency to extreme swelling. The limb should be bathed with warm water (as directed on p. 22). Elliman's should be rubbed in for a quarter of an hour, and then the part padded with cotton wool, and lastly bandaged with ordinary woollen material, as tightly as possible.

There is much art in this matter of bandaging, especially in the case of lameness, the result of sprained tendons. Judicious pressure will help the Elliman's in its work of absorbing inflammatory products, and reduce the thickened tendon.

SPRAIN OF THE CHECK LIGAMENT.

This is an even more disastrous accident than sprung back-tendons, and some time must elapse before the animal can return to work.

Causes.—The same as those mentioned in connection with back tendons (see p. 28).

Treatment.—Before the advantages of Elliman's were fully known, it was the custom to fire deeply and then turn out the horse to grass for a whole year or more. Now, no such cruel method is necessary, and recovery may be expected by repeated applications of Elliman's, the number and frequency of them being left to the judgment of the owner, who will be guided by the forming of the scurf and the declining of the swelling. The support of cotton wool and bandages is here also recommended.

SPRAIN OF THE SUSPENSORY LIGAMENT.

Severe sprain of this ligament makes a horse's fetlock come near to the ground, or as low as the heel. It is always a very

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RUPTURE OF FLEXOR TENDONS.

RUPTURE OF SUSPENSORY LIGAMENT.

grave condition, and the services of a veterinary surgeon should be immediately secured. However bad that may be, provided

the fetlock does not descend to the ground, there is hope of recovery and of a return to steady work, but for *racing or other fast paces* the prospects are poor indeed. If the sprain happens to a valuable thoroughbred mare or horse, it may be worth while to attempt treatment.

Treatment.—Lift the limb off the ground, fill the hollow of the heel with wadding, bandage, and send for a veterinary surgeon. Often only one of the branches of the suspensory is injured, and then careful management will result in restoration to usefulness if not in an absolute cure. A long application of the Elliman's is necessary, and the injured member may be cased up in wool and bandaged tightly, then remain covered for three days before again applying the Elliman's. If the skin seems tender, half strength may be used on the subsequent occasions. As recovery takes place the intervals should be longer between the applications of the Embrocation, but its bracing effect must not be suddenly withdrawn.

SPRAINED FETLOCK.

Under this term a variety of tendons and ligaments may be included. The size of the bones at the fetlock occasions the necessity of the other structures lying on the surface or very near it. This is much in their favour when strained and needing assistance, a remark which has already been applied to the knee (see p. 24).

Treatment.—Foment with warm water (see p. 22), and apply Elliman's with gentle friction for several minutes. Wrap the joint in cotton wool upwards from the heel, and apply a tight bandage over all. Remove and repeat daily.

SPRAINED PASTERN.

When the small ligaments and tendons passing down over the front of this part are strained, it is too often assumed that a ringbone is forming, but compression under the finger should be the test of this. The application of Elliman's may be reckoned on with certainty to effect a complete cure of any sprain to which these structures are liable. Frequent rubbings and a few days' rest are all that is necessary.

SPRAIN OF THE BACK.

This is caused in a variety of ways. The hunter gets it in taking off from sticky ground, and the hack from the weight of his rider, rolling about or sitting back, and neglecting to ease the horse by changing his own position, or by a horse getting cast in his stable.

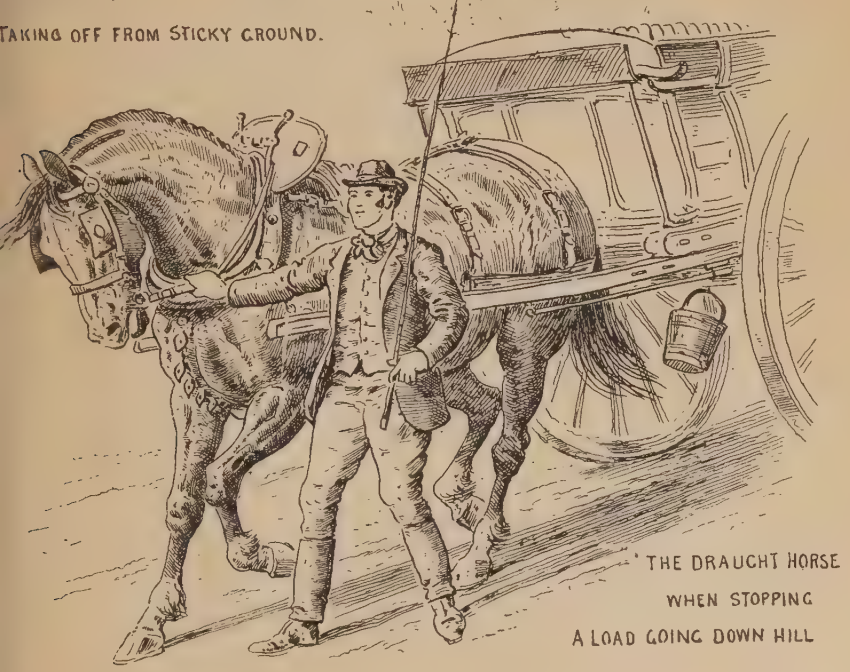
The draught horse's back is sprained in backing, or by stopping a load down hill without skid-pan or break.

There are two distinct sets of muscles concerned in strains of the loins—those which lie upon the top of the spinal wings and cover the bones, and those under the column of bones and against which the kidneys are embedded in fat. It will be readily understood how a remedy such as Elliman's applied to the surface will affect those muscles on the top, but, as a matter of experience, it is found that a sprain on the psoae, or loin muscles underneath, is almost as quickly acted upon. We have already explained on p. 18, par. 3, how deep-seated structures are affected by the Elliman's. A person may suffer a pain in the back, which is well known to arise from kidney disturbance, yet the rubbing in of Elliman's is found to diminish or altogether banish the pain in a short time, owing to its diuretic action.

Prevention of sprains to the loins is to be looked for in the better balancing of two-wheeled carts by reducing weight, and the proper adjustment of the load and of the breeching.

SPRAIN
OF THE
BACK

HUNTER GETS IT
TAKING OFF FROM STICKY GROUND.



THE DRAUGHT HORSE
WHEN STOPPING
A LOAD GOING DOWN HILL

SPRAIN OF THE ROUND BONE.

There is, unfortunately, a great deal of confusion as to the meaning of this expression; some refer by it to the hip, others to the haunch, and others to the stifle. Sprains to either of these parts may be caused by drop jumps, falls, stumbles, and twists in backing and turning. Some of them occur in the stable, by coming round in a stall too narrow, or through slipping upon the gratings, or through a false step in a drain, or by getting cast in the stable.

Treatment consists in a thorough daily rubbing in of the Elliman's, and the use of a loose box in which to secure gentle exercise to prevent stiffness and loss of movement. A cooling diet should be given in bad cases, and the support of slings may be advisable for the first few days.

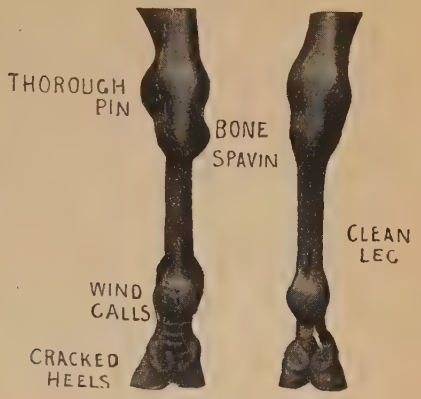
SPRAINED STIFLE JOINT.

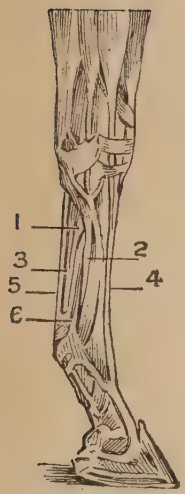
This is generally the result of luxation or dislocation of the patella, which corresponds to the knee-pan of the human subject. It often occurs to overgrown colts on hilly pastures. The direction taken is always outwards, consequently it is the inner ligament that is stretched beyond its natural length.

Treatment.—The dislocation should be reduced. The subsequent treatment consists of rubbing the Elliman's all round the joint daily, until the fullest effect is produced, as it is essential that a large swelling should be created under the skin to act as a cushion and prevent the recurrence of the trouble (see the way in which Elliman's acts, p. 20). When recovered, the animal should be put on a level pasture until the weakened ligament has quite regained its strength, allowing as much time as possible.

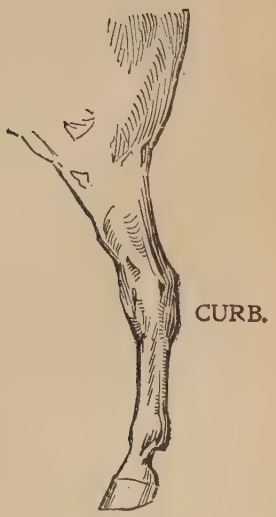
SPRAINED HOCK.

If one joint in the body is of more importance than another, it is the hock. Like the knee, it has a double row of small





1. Check Ligament.
2. Splint Bone.
3. Perforans Tendon.
4. Extensor Pedis Tendon.
5. Perforatus Tendon.
6. Superior Sesamoid Ligament or Suspensory.



bones, but comparatively there is less movement between them. They are united by a number of small ligaments, and these are liable to suffer sprain in jumping, galloping, or drawing in harness. What is called a "sprung" hock is a very serious matter, and all thought of working the horse must be abandoned for a long time. It is an injury in which many of the smaller ligaments are affected, and inflammation of the covering of the bones is also present.

A sprung hock is a case for a veterinary surgeon. The hock is subject to minor strains in which only one or two ligaments are involved, and here Elliman's is the remedy. Additional heat and tenderness may be discovered on one side of the joint, perhaps, and a few good rubbings with the Elliman's, and rest, may be all that is required. Below the hock all the parts correspond to the front leg already described. The treatment is the same.

CURB

Is a sprain of the calcaneo-cuboid ligament, causing an enlargement at the back and lower part of the hock, from three to four inches below the point (see illustration, p. 35).

Young horses and cow-hocked horses (see illustration, page 43) are most liable to throw curb, it is caused by sudden or violent motion such as taking a great leap, or a severe gallop through deep ground.

Treatment.—A dose of physic is in most cases desirable. The inflammation should be reduced by hot fomentations, or by repeated application of a cold evaporating lotion of equal parts of spirit and vinegar, this having been accomplished, the hair should be clipped off and the part well rubbed crosswise with Elliman's every day until it becomes too sore for it to be continued, a thick scurf will rise, and when that comes fairly off, the Elliman's should, if necessary, be again applied as before. A high-heeled shoe will take off strain and thus help to recovery.

BROKEN KNEES.

The skin of the knee is seldom broken by any other means than by a fall. The small bones are occasionally broken and the knee breaks open at the back. A more frequent difficulty is the rupture of the casing (capsular ligament) which encloses the joint oil, this may occur at the time of the fall or subsequently, when the swelling bursts some portion of it rendered weak. The open wound is in a condition to invite the invasion of injurious organisms (bacteria). Attention is particularly invited to the above explanation in order that the reader may understand the scientific reason for using Elliman's.

Treatment.—It is essential that the wound should be cleared of grit or other foreign matter. At this stage germs are too often introduced by using ditch or other dirty water. An efficient disinfectant should be employed; for this purpose some Elliman's may be mixed in the proportion of a wine glass to a quart of water. The knee should be bent while bathing it, as grit is thus best dislodged Poultices were much used formerly, but the most advanced veterinary surgeons are in favour of antiseptic treatment throughout, depending on Elliman's to draw out the inflammation by repeated applications on or around the part. Any swelling that follows will then be under the skin, and act as a support to the capsular ligament, and dimish the chances of rupture and escape of joint oil. There is, too, a scientific reason for applying the Elliman's to the wound itself; not in the undiluted state, but added to ten times its volume of soft water. Elliman's has been proved to be a germicide or destroyer of injurious organisms.

When the skin is not cut, but bruised, the hair shaved off, with oozing of blood, wash the wound clean, sop it with Elliman's; repeat twice daily.

When the skin is cut, wash the wound clean, sop it with a mixture of one part of Elliman's to ten parts of water to the bottom of the wound.

The edges of the wound should be brought together as nearly as possible by means of a light, soft bandage; this dressing should not be interfered with for three or four days if the case progresses favourably, but if the leg swells and shows signs of inflammation, examine the wound, and if suppurating, wash lightly, and dress with a dilute mixture of the Elliman's (one part of Elliman's to ten parts of water).

The gap in a broken knee has to be filled up by the process known as granulation, and this process is accelerated by the occasional touching over of the surface with the diluted Elliman's. When the space is filled up with healthy-looking red granules the Elliman's should be discontinued and the wound allowed to dry without any bandage or covering.

CONTUSED FETLOCK.

When a horse falls and breaks his knees, he frequently also skins the front of the fetlock joint, bruising the tissues beneath at the same time. The treatment for this is exactly the same as for broken knee (see above).

TIMBER LEAP.

Under this name is known the enlargement of the bursa or secreting membrane which is found on the point of the fetlock, which also gets cut when a horse falls (see contused fetlock above). If taken in hand early, Elliman's will make a speedy cure. This enlargement always arises from a bruise. In hunters it is often caused by striking the top rail of a fence, and hence its name.

Impatient horses sometimes strike the manger and bring about the enlargement in that way. The amount of Elliman's used is not so important as the friction or massage employed in bringing about a healthy action in the secretion while dispersing the abnormal fluid.

CAPPED ELBOW.

This very unsightly injury may be caused by the heel of the shoe when lying down. Horses which have a habit of scraping away their bedding may also bring about this disfigurement, by pressure of the elbow on the hard floor.

Treatment.—No remedy is better than Elliman's, if the case be taken in time.

The swelling at first is composed entirely of fluid, and the Elliman's will greatly excite its absorption. It should be employed with plenty of friction and kneading with the fingers. A pad should be used to prevent recurrence of the injury.

Prevention.—A liberal supply of bedding. See that the heels of the shoes are not too long.

CAPPED HOCK.

The cause of capped hock is the same as capped elbow and timber leap, namely, an engorgement of the oil sac or bursa, which nature provides to prevent friction.

All these swellings become permanently hardened and immovable (without a surgical operation), unless promptly taken in hand while in the soft or fluid state.

Treatment.—What has been said about the elbow applies equally to the hock.

Prevention.—See that the floor of the stable is in good condition and is not slippery. A good bedding of moss litter is preferable for horses liable to cap their hocks.

Good Shoulder.

Straight and Short Shoulder.

Goose Rump.

Straight Rump.

STANDING WELL.

STANDS UNDER.

ARCHED KNEE.

CALF LEGGED.

STANDING FAIR.

STANDING CLOSE.

STANDING WIDE.

Splay Footed.

Pin-Toed.

Knock Kneed.

Ox Kneed

Straight Jointed.

Short Pastern.

Long Pasterns.

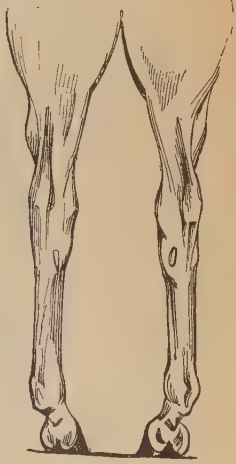
STANDING WELL.

HOCK TOO BACK.

HOCK TOO MUCH UNDER.

STANDING WELL.

COW HOCKED.



PIN-TOED.

OTHER INJURIES TO JOINTS, TENDONS, LIGAMENTS, &c.

Besides the frequent lamenesses brought about by strains, there are many injuries from blows, which call for remark as being amenable to treatment by Elliman's. External violence causes inflammation, not by undue elongation of the parts affected, as described in speaking of sprains, but by sudden compression. If the force of the blow is sufficient, death of the part follows, as in the treads which heavy horses inflict upon one another, and upon themselves, in turning in harness. Nature sets about getting rid of the dead tissue, and, in surgical language, "sloughs" it. Dressing with Elliman's will here be useful. Injuries less serious also result in inflammation (see p. 58). Kicks and blows on the knee, hock, fetlock, stifle, the pastern, shin, back, tendons, and about the head and body, are best treated by fomentation, followed by rubbing with Elliman's when the skin is not broken, but when the skin is broken, after the fomentation the Elliman's should be *dabbed* on with a piece of clean cotton wool, lint, or tow.

HOCK TOO BENT.

HOCK TOO STRAIGHT.

WIND GALLS.

Joint oil or synovia—previously referred to in connection with broken knees,—capped elbow and hock,—is an oil provided at all points where friction might arise, and is to the animal what machine oil is to the engine. The bursæ or oil sacs which, in health, exude sufficient for the purpose of making the parts work smoothly, become irritated under stress of work or unhealthy conditions and fill up the joint with a fluid which is not true synovia.

This is the state of the bursæ just above the fetlocks in a horse which is commonly called "used," or showing signs of wear.

These enlargements were supposed to contain air; hence the name. They are found chiefly about the fetlock joints, the bock tendons, the knees and the hocks.

Treatment.—When they are not consolidated by time a cure may be looked for by the well rubbing in of Elliman's and by proper bandaging. A thick layer of cotton wool should be wrapped around the legs over the wind galls, and in bandaging two or three folds should be made round it, each drawn a little tighter than the last. If a rest can be obtained, it would be advisable. Such enlargements are not often the cause of lameness. Very severe work may start them again. The horse should be shod with shoes slightly raised at the heels.

SPLINTS

cause lameness when first forming. They are induced by concussion, by blows, and by hereditary predisposition.

They may be very large and of little consequence, or so small that only an expert can find them, and yet they may make a horse useless for a time.

To discover the seat of lameness the limb should be lifted up, and carefully pressed with the fingers from just below the knee to the end of the splint-bone above the fetlock.

The horse will generally flinch when pressed on the spot.

THE NATURE OF A SPLINT.

The reader should understand that all bones are covered with a membrane or skin called periosteum. The bones grow and maintain themselves when adult, by the nourishment conveyed to them by this covering membrane, which is thickly interspersed with blood vessels.

When this periosteum is injured, either by concussion or external violence, inflammation is set up. Inflammation where the cannon and splint bones join is the commencement of what is called a splint. The blood vessels bring too much bony material to the spot and leave a deposit there.

Treatment.—Elliman's should be well rubbed on and around the part every day until it is too sore for the treatment to be continued, when it must be left alone until the scurf raised is removed and the soreness has subsided, when the rubbing as before may be repeated if necessary.

If it has been allowed to become hardened, it will take time to excite absorption, but this can be done with perseverance.

Prevention.—Careful usage and not putting horses to hard work too young.

Fig. 1.

FIG. 1.—SPLINT ATTACHING INTERNAL SMALL METACARPAL BONE.

1. Internal small metacarpal bone.
2. External small metacarpal.
3. Large metacarpal bone.
4. 4. Bony growth constituting a large splint, and attaching the small to the large metacarpal bone.

Fig. 2.

FIG. 2.—ENORMOUS SPLINT, ATTACHING BOTH SMALL METACARPALS TO THE LARGE.

1. Large metacarpal bones.
2. 3. Mass of exostosis connecting the three metacarpal bones together.

SPAVIN.

A tendency to spavin is undoubtedly hereditary, but the exciting or actual cause is some strain put upon the covering membrane of the small bones of the hock (see NATURE OF A SPLINT, p. 46).

Inflammation is set up, a bony deposit takes place between the bones, their sphere of motion is restricted, and lameness, more or less, results.

Treatment.—What has been said of splint applies with even greater force to spavin. Elliman's should be well rubbed on and around the part every day until it is too sore to be continued, when it must be left alone until the scurf raised is removed and the soreness has subsided, when the rubbing as before may be repeated if necessary.

BOG SPAVIN OR BLOOD SPAVIN.

This term is given to an enlargement of the hock, caused by strain. There is a large vein which passes over the spavin place. It is very close to the surface and becomes distended or varicose.

Treatment.—Elliman's should be well rubbed on and around the part every day until it is too sore to be continued, when it must be left alone until the scurf raised is removed and the soreness has subsided, when the rubbing as before may be repeated if necessary.

ANTERO-INTERNAL VIEW OF EXOSTOSIS CONSTITUTING SPAVIN.

1. Os scaphoides.
2. Os cuneiforme parvum.
3. Morbid growth of bone, constituting the disease known as bone spavin.
4. Large metatarsal or cannon bone.

INTERNAL VIEW OF TARSAL BONES.

2. Inferior extremity of the tibia.
   - *a.* Internal malleolus.
   - *b.* External malleolus.
3. Os calcis.
4 and 5. Surfaces of articulation on the astragalus, which, together with corresponding ones on the tibia, form the great hinge joint of the skeleton.
   - *b.* Tubercle on the astragalus for the attachment of ligaments.
6. Os scaphoides.
7. — cuneiforme magnum.
8. — cuneiforme parvum.
9. Large metatarsal bone.
10. Internal small metatarsal bone.

THOROUGHPIN

Is a distention of the hock through which the fluid bulges between the os calcis. This shows first on one side and then on the other, when the hock is pressed by the finger and thumb.

Treatment.—Elliman's should be well rubbed on and around the part every day until it is too sore to be continued, when it must be left alone until the scurf raised is removed, and the soreness has subsided, when the rubbing as before may be repeated if necessary.

It is desirable to apply a Thoroughpin Truss, which should be kept on whilst the horse is in the stable. A high-heeled shoe is also an advantage

CORNS.

Corns in horses are bruises situated in the angle between the bar and the quarter, and generally on the inner side of the fore foot, brought on from concussion and pressure of the heel of the shoe on the part. The fault may be from the farrier making the shoe too short, or from not having spread enough for the quarter to rest upon; but we think the fault is more often with the owner in allowing the shoe to remain on too long, in which case the crust grows over the outside of the shoe and the bearing is thrown on to the part susceptible of bruises. Horses with low weak heels and flat feet are more liable to corns.

Treatment.—In severe cases, when there is much extravasation of blood, great tenderness, suppuration or inclination to suppuration, the foot should be well soaked in hot water and poulticed for a few days with linseed meal poultice, but in slight cases having the corn lightly pared out and taking off all pressure will be sufficient to enable the horse to work with little discomfort. A leather sole will protect the sore and exposed part from injury. Have the horse shod with a fairly long shoe, set broad, and have the shoe seated; a seated shoe is one with the upper surface beaten out rather more than half the distance across it; such beating out does not extend to the heels, it takes off all the pressure from the sole, and the whole is thrown upon the crust.

HAIR.

Mange and such-like diseases cause a falling off of hair, so does severe blistering; but they do not kill or destroy the bulbs or roots of the hair, and, the cause being removed, the hair will grow again.

Loss of hair is unsightly. There are many things which are said to promote growth of hair, but we think none better than Elliman's lightly sponged every other day over the part devoid of hair.

If from accident, or from the use of caustics, or other cause, the roots or bulbs have been removed or destroyed, hair will not again grow on the part.

SADDLE AND HARNESS GALLS.

(SORE SHOULDERS AND BACKS.)

The cause is obvious. Saddlery and harness, and collars in particular, should be more frequently overhauled. Some skins are, however, so prone to gall that no one is to blame. The galls inflicted by saddlery and harness differ so much in intensity that the same treatment is not applicable to all. The least lump or swelling should be dispersed without delay by gentle friction with Elliman's, but where the skin is broken or raw, the Elliman's should be diluted—one in five of water—and dabbed on the part with a piece of clean sponge or cotton wool, once or twice a day until healed. Neglected, it may run on to an abscess.

ABSCESS.

The Elliman's will still be the best remedy, because its application will save time by assisting nature to bring the matter to a point. This treatment applies to all abscesses, no matter from what cause. When the finger is able to detect a thin place, the matter is said to "point," and the time has arrived to lance it and let out the contents.

A pledget of tow dipped in the Elliman's should then be inserted into the wound for one night, or it may refill; upon a few inches around the orifice the skin should receive a daily

application, to prevent the formation of more matter. No further treatment will be required if the wound is kept clean.

SITFASTS.

Cause.—Pressure, long continued or momentarily severe. The injury is of such a nature that repair is impossible (see TREADS, p. 56). A portion of skin, and possibly some deeper structure, is killed, and has to be separated from the living substance.

Treatment.—Readers with medical knowledge will be the first to understand how the use of Elliman's will facilitate the separation of the sitfast. To excite activity in the immediate neighbourhood is to help nature to detach the dead portion.

As the edges curl up, a little Elliman's may be painted under them with a fine brush. When the sitfast comes away the rest may be left to nature.

FISTULOUS WITHERS.

Instead of a gall, an abscess or a sitfast forms as the result of saddle pressure, and the damage is sometimes deep seated. The fibrous tissues beneath the skin or upon the backbone are so injured that a fistula is established, in which case a veterinary surgeon should be employed. By early use of Elliman's many a fistulous wound is prevented, and the *importance* of attention to saddle galls cannot be too much insisted on.

RHEUMATISM.

The causes of rheumatism in horses are thought to be the same as in man. That damp and ill-drained stables cause rheumatism is easily enough proved by the statistics of the great omnibus and other studs, whose horses suffer from the disease in some situations and not in others, although they have the same rations and similar work.

Symptoms.—Cramp and lameness are the two prominent ones, but the distinguishing feature is the suddenness of the

attack, no other cause but rheumatism being assignable for the extraordinary manner in which the pain leaves one joint or limb and attacks another. There is often swelling and tenderness to guide one, but these symptoms are not invariably present.

Treatment.—In Elliman's we have an excellent remedy. For an affected joint the Elliman's should be poured into the palm of each hand and applied with a gentle friction and chafing movement for ten minutes at a time, repeating the operation twice or three times a day until the joint is cured. If the weather is cold a little of the Elliman's may, after rubbing, be applied on a flannel bandage, the Elliman's being very lightly sprinkled upon the flannel; care being taken that the stable is kept at moderate temperature. Gentle exercise is recommended to prevent the joint from becoming stiff, and precaution taken that no chill is contracted.

Very bad cases should have internal treatment as well. Two-drachm doses of salicylate of soda in a gill or quarter-pint of water, night and morning; or potassium bicarbonate two-drachm doses night and morning, with the food or in the drinking water.

CRAMP,

when not rheumatic in its origin, is caused by an unequal distribution of nerve force or interrupted circulation of the blood. The symptoms are loss of power. The animal tries to use his muscles as a man does when his leg or arm has "gone to sleep."

Treatment.—If the horse has remained on one side and got cramp in that way, the first thing to do is to roll him over on to the other. If cramp arises from the plugging of a large blood vessel, the symptoms can be alleviated by the Elliman's, but in any other case it is an absolute specific. A large surface should be included when rubbing for this affection. All the muscles of the limb in the horse unable to rise through cramp of the lumbar muscles (that is along the whole length of the back, from the withers to the tail) should be well rubbed with the Elliman's.

Prevention.—Horses known to be the subjects of cramp should have extra bedding and a loose box.

CUTS.

Simple wounds, in which there is no reason to suspect the presence of grit, or foreign matter of any other kind, are best treated by dabbing the part with Elliman's, diluted with an equal quantity of water.

A clean incised wound may require some mechanical means of keeping the edges together. Any serious wound should have the services of a veterinary surgeon; but, failing to obtain professional assistance, the edges may be brought together by stout pins filed on three sides to make them penetrate the tough skin of the horse. Around these tow or thread may be wound in the form of a figure 8.

A wound sufficiently large to require sutures or pins will not be likely to heal by adhesion, and it is well to dilute the Elliman's as recommended at pp. 37 and 38 for "Broken Knees," so as to keep out germs while the slower process of granulation fills up the wound and unites the skin by a scar.

TORN AND LACERATED WOUNDS.

These can never heal by the simple process of adhesion; they must be repaired in another way. A veterinary surgeon should be employed.

A light dressing of Elliman's will be good treatment until skilled aid can be obtained. It has already been stated that the Elliman's is a germicide, and prevents the invasion of microbes. If assistance is unattainable, then the directions given in connection with incised wounds (see above) should be carried out as far as possible, bringing the edges of the skin as nearly together as may be, but avoiding any strain on the soft parts. Allowance should be made for the swelling that will be sure to follow. Stitches too tight will tear out. In hot countries, where flies abound, the wound should be covered lightly, and shade secured. A dark stable is preferable, inasmuch as flies will not stay in it.

PUNCTURED WOUNDS.

A small punctured wound is more to be feared than a large incised one. Although it will often heal by first intention, it is

never safe to let it All may appear to be well, and months afterwards a swelling come up at or near the spot, an abscess (see p. 51) form, or worse still, a fistula (see FISTULA, p. 52). The nail or other object which caused the puncture was probably rusty or dirty, and conveyed some deleterious matter.

Treatment.—Enlarge the orifice. Get drainage. Dip some tow or a strand of rope in Elliman's and push it into the wound as far as it will go. Leave it in till next day. Renew it two or three times until a healthy discharge takes place. The colour should be pale yellow, and the consistence about that of cream. No fear of results need be entertained after this treatment, and the wound may be allowed to heal up.

CRACKED OR SORE HEELS.

The heels are subject to chaps and cracks in winter, as the result of chills, from their being allowed to remain wet, and from the irritating effects of mud. The dust of summer is also known to have the same effect, especially of certain soils.

Treatment.—Cleanse thoroughly with warm water and yellow, not soft, soap, and wipe dry. Dust the wound with equal parts of dried alum and oxide of zinc, or use oxide of zinc ointment. Rub in the Elliman's round the coronet and in front of the pastern. The application of Elliman's acts as a derivative, in this case, diverting blood from the inflamed part.

MALLENDERS AND SALLENDERS.

Whenever a scurfiness, followed by a crack, appears behind the knee, it is called a mallender. A similar condition in front of the hock is known as a sallender. These two diseases bear a relation to cracked heels. Where the skin is required to bend frequently as in these places, a special provision is made to prevent friction. Under the skin are found little glands whose office it is to secrete an unctuous material resembling vaseline. These glands fulfil their function in all ordinary times, but are liable to become blocked up by irritating dust, or inflamed by frost and snow.

Treatment.—In general the treatment is the same as for cracked heels (see p. 55), but often a little strong mercurial ointment rubbed upon them is an effectual remedy.

TREADS

are injuries to the parts immediately above the hoof, and are caused by placing one foot on the other, or else by the tread of another horse. They most frequently happen to heavy horses, working in pairs, and the accident occurs in turning.

The calkin of the shoe being generally responsible, the injury is so severe that the part is literally killed on the spot. A piece of dead tissue has to detach itself, or rather, we should say, be cast off, before healing can take place (see SITFASTS, p. 52).

Treatment.—The broken-down part being removed, the Elliman's should be dabbed on the place every night and morning.

OVER-REACHES.

Most common in hunters when the going is heavy; also young horses and others, when overpaced, are liable to strike the heel of the front foot with the toe of the hind foot. The injury created is almost invariably just between hair and hoof, an offensive discharge is soon set up, and the horse is likely to be lame next day until the soreness works off by re-opening the wound and giving vent to the discharge.

Treatment.—Elliman's, one in four of water, should be dabbed on and allowed to soak in, then apply lint and a tight bandage over all.

Prevention.—Pay attention to the shoeing.

BRUSHING.

The habit of brushing is either due to malformation, such as horses long in the loins, which causes weakness, turned out toes, or to fatigue; also young horses are liable to "brush" from want of condition. It also happens through shoeing too "full" on the inside, or a clench may work up and do the mischief. Sufficient importance is not always attached to this minor accident until a permanent enlargement makes it impossible for the animal to travel without brushing.

Treatment.—Dab the part with Elliman's, rub it in round the joint, put on a dry bandage, commencing at the foot.

Prevention.—Feather-edged shoes and frequent examination of them to see that there is no overlapping and that the clenches are kept down. A so-called "knocked-up" shoe is best. Short journeys only should be taken by young horses, and they should be bandaged at home as long as the tendency to brush remains. Young horses or confirmed "brushers" should have "brushing boots" on whilst at work.

SPEEDY CUTTING.

Defective action is the common cause, and, as the name implies, it occurs only in the fast paces.

The lower and inside border of the knee is the part struck by the shoe of the opposite foot, or in some horses by the hoof itself.

Treatment.—Dab on Elliman's and rub it all round, to draw away the swelling and prevent a lump from forming.

Prevention.—In the case of young animals, they sometimes grow out of it with careful drivers; but there is, practically, no means of prevention except by wearing a boot or protective substance.

A speedy-cutter is so dangerous an animal that it is well to find him a job at his own pace. Some speedy cutters may be made to do useful work, but at a fast pace they are always liable to come down.

THORNS AND OTHER FOREIGN BODIES.

When a thorn, splinter, or other substance pierces the skin it is not always observed at the time, but lameness and swelling of a tendon or other structure often takes place next day.

In the case of hunters, in particular, the attendant should keep the possibility of thorns specially in mind; their presence is often mistaken for sprain. The greater tenderness over some small spot should excite suspicion, and cause a search to be made.

Treatment.—Close clip the affected part, or even go to the extent of shaving it, in order to find the foreign body. Enlarge the opening with a lancet and extract the offender. Apply the Elliman's to the wound as well as all round it, and, if it is not distinctly relieved next day, put on poultices to induce the remainder of the thorn to come out. If all is got out at the first attempt it will need no other treatment than the Elliman's.

MUD FEVER.

This disease is of the nature of erythema, and should be treated with internal remedies as well as applications to the skin.

Cooling doses of Epsom salts should be given, say ¼-lb. in a mash at night for two or three nights; and, for a lotion, 1 fluid ounce of Goulard's extract, mixed in a pint of linseed oil, should be used.

Prevention.—On returning to the stable wash off the dirt, wipe dry, and let the legs be rubbed with a little Elliman's.

GREASE.

Coarse, hairy-legged horses are very liable to this disease of the skin of the heels and lower part of the back of the legs.

Constitutional remedies, as well as outside agents, need to be employed.

Sulphates of zinc and of copper dissolved in water make a very good lotion; half an ounce of either sulphate of zinc or sulphate of copper, dissolved in a pint of water, may be applied with a sponge once or twice a day. Small doses, one or two drachms of the sulphate of copper, given in the form of a ball for several nights, will be perfectly safe and beneficial.

Prevention.—Keep the legs as dry as possible and never wash them. Brush out the mud when dry. Give an occasional diuretic ball.

LEGS SWOLLEN FROM INFLAMMATION OF THE LYMPHATICS (Lymphangitis).

Treatment.—The hind legs are much oftener affected, though the fore legs sometimes suffer. A horse may be left at night with his legs in normal condition, and in the morning one (or it may be both) of his hind legs are found to be enormously enlarged, the skin tight and shining, hot and extremely tender: he cannot bear to have the leg touched, and sometimes to avoid one doing so, he lifts it, and falls, or nearly falls, over. It is a sudden and

intense inflammation of the absorbents ; he is off his feed, there is fever, a quickened pulse, and the mouth is hot. Both old and young horses are liable to this affection. A dose of physic, consisting of five drachms of Barbadoes Aloes, should be given, followed, after twelve hours, by a draught consisting of two ounces of Spirits of Turpentine in half a pint of linseed oil. The draught may be repeated every day for three days, and afterwards at longer intervals —say of three days—if considered necessary. The leg should be constantly fomented with water as hot as the horse can comfortably bear it (see hot water, p. 22). The leg should be rubbed dry, and then gently rubbed with Elliman's.

As soon as the tenderness has gone off and an indentation or depression can be made by the pressure of the thumb, or as it is commonly said, as soon as the leg begins to pit, it should be kept bandaged with a woollen bandage. When sufficiently recovered, the horse should be very gradually put to work.

SWELLED LEGS FROM DEBILITY.

Treatment.—Horses' legs very often fill or swell from debility, in which case the object must be to increase the strength of the system generally. A liberal allowance of oats should be given with bran, or the bran may be given as a mash twice a week. Carrots may be given with advantage. The horse should be fed regularly ; he should have gentle and regular exercise, his legs should be well hand-rubbed and then sponged with Elliman's, and dry bandaged while in the stable.

DISEASES OF THE FEET.

Contracted Feet.—Many a horse is reduced in value by contracted feet. They may not cause him to go lame, but experience proves that he is more likely to do so than a horse with a large open foot.

Treatment.—A foot can be made to grow larger, even in an old horse, if the band round the top is stimulated from time to time with the Elliman's.

The foot grows from the coronary band just as the human nail

does from the quick, and anything that stimulates the coronary band causes an increased growth. Rub on the Elliman's three times a week.

WEAK CORONETS.

Colts that have been starved or stunted by intestinal worms may grow up with weak, thin coronets, which seem almost to show the edge of the horn instead of a full round ring.

Treatment.—Rub the Elliman's all round the coronets twice or three times a week.

The enlargement which Elliman's can bring about in the horse's foot may be ascertained by measuring the impress of the foot before the treatment and after the horn has grown down.

Prevention consists in liberal feeding and plenty of exercise when quite young.

SIDE-BONES.

The term "side-bone" is given to a conversion of the lateral cartilages into bone, which, instead of being flexible under the pressure, is found to be hard and unyielding.

The cause is concussion on hard ground, and it is most common to heavy horses.

It is largely hereditary.

Ossification of the Lateral Cartilages.

1. Pedal bone. 3. 3. The lateral cartilages ossified.

Treatment.—When the first sign of lameness appears, it may be arrested by the use of Elliman's, applied as for Thoroughpin (p. 50).

RING-BONE.

Ring bone is not a conversion of cartilage into bone, like side-bone; it is a growth of bone on bone caused by concussion

CASE OF RING-BONE AND SIDE-BONE OCCURRING IN A HEAVY DRAY HORSE.

1. Os suffraginis.
2. Os coronæ.
3. Os pedis
4. Complete union by ossific matter between the os pedis and os coronæ, but still incomplete in the joint above.
5. Complete union of the three bones.

and subsequent inflammation of the covering membrane (periosteum).

Treatment.—Elliman's should be well rubbed on and around the part every day until too sore to be continued, when it must be left alone until the scurf raised is removed and the soreness has subsided, when the rubbing as before may be repeated if necessary.

There is no known preventive of this disease, but, as it is well known to descend from parent to offspring, those subject to it should not be bred from, however suitable they may be in other respects.

SAND CRACK.

This is due to the imperfect secretion of horn. In a sound foot there is a perfect blending of gelatinous and hard material, but where the gelatinous is wanting, sand-crack is liable to follow. A common cause is due to the farrier rasping the wall of the foot after shoeing, thus removing the gelatinous layers, and so producing evaporation and dryness which eventually cracks.

On the inside of the fore foot and at the toe of the hind, is where it most often occurs.

Treatment.—Remove the shoe and cut an inversed Λ where the crack touches the sole or ground surface. At the top of the crack, that is to say, immediately below the coronet, make a true V with a firing iron, the crack running down through the centre or bisecting the Λ.

This mechanical arrangement distributes the concussion over the sound parts while resting the injured. The Elliman's should be rubbed into the coronet all the way round, so as to promote a sound growth of fresh horn. The crack will grow out, unless the coronary band has been severed by a wound. Then a mark of union will be left, but the animal may become sound in going and remain so.

FEVER IN THE FEET (Laminitis).

Acute and chronic inflammation of the sensitive laminæ renders many horses unsound.

Causes.—There are several and not always discoverable. The acute form comes on in horses too well fed and insufficiently exercised, and then suddenly called upon to do fast work.

As it is often mistaken for injury to the back it may be well to briefly describe the symptoms common to both forms, only it will be understood by the reader that in the acute attack the symptoms are much more pronounced.

The animal that appeared to be in health at bedding-up time is found next morning to be unable to move or get across the stall, he leans back so as to put all the weight he can on his heels, at the same time getting his hind feet as far under him as possible. Although these may share the attack, they never suffer so much as the front ones, which at all times support more of the animal's weight.

He may be "blowing," but it is with pain and not from any chest disease.

His face is anxious, his appetite gone. He stands as if his spine were all in one piece.

Treatment.—Envelop the feet with poultices of warm bran and linseed of equal proportions. Some say, give a dose of physic. That such treatment is quicker in its effect is undoubted, but there is an apparently well-founded belief that chest or bowel complaint is more likely to follow.

With abatement of the early or worst symptoms, and with discontinuance of the poultices, the Elliman's can be substituted with great advantage. An application around the coronet daily will draw out the inflammation and tend to prevent those subsequent changes of structure within the foot, which end in a "dropped" sole, and indicate "Chronic Laminitis."

A turn out on marshy land is to be recommended.

Special shoeing is desirable, and the best farrier should be sought.

THRUSH

is a disease of the frog, brought about by standing in wet and dirty stables. It is sometimes hereditary.

Bad shoeing has also something to do with it. The heel being always lifted off the ground, the frog gets no fair share of pressure, and wasting is the result. The discharge from the cleft of the frog is very offensive.

Treatment.—Pare away all the dead horn and wash out all evil-smelling matter. Mix one part of salt with four or five parts of tar, and pour into the decayed part, particularly into the cleft.

A pledget of tow dipped into the compound and pressed into the cleft and left there, is good treatment.

In severe cases of long standing, get four drachms of finely powdered sulphate of copper, and mix it with four ounces of Stockholm Tar; have the thrush cleaned with warm water and soap, and when dry, having stirred into ointment, introduce some into the cleft of the frog and press it in with a piece of soft tow. Dress the frog every or every other day.

BRITTLE HOOF.

Some horses are very seriously inconvenienced by this—in most cases a natural defect. They are most affected when the weather is hot and dry. The shoeing smith (owing to the hoofs having broken away) has often great difficulty in obtaining nail hold, and lameness frequently results from the nails being driven too close to the sensitive part of the foot. The pliancy and toughness of the horn can be greatly restored or increased by brushing into the crust ointment of sulphate of copper and vaseline, one part of the former to eight parts of the latter. A little Elliman's should be rubbed round the coronet every other day to promote the growth of horn.

SEEDY TOE.

It is a diseased mealy formation of horn, destroying the union of the outer wall with the laminæ, and causing a vacant space between them, a hollowness which can be detected by percussion from the sound produced. Seedy toe is generally the result of laminitis, but sometimes from pressure of the clip of the shoe. The treatment consists in the rasping away of the horn and the careful removal of every particle of the mealy horn; in order to do this it is sometimes necessary to remove so much of the hoof that the shoeing smith is unable to get a nail to hold sufficiently to fasten on the shoe, in which case he must wait for the growing down of the horn to enable him to do so.

The horse should be put on moss litter, as his foot or feet will then be very sore, and that will be soft for them, the hoof kept wet with a swab, and Elliman's should, every or every other day, be rubbed round the coronet to stimulate and promote the growth of hoof.

CLICKING OR FORGING.

A very objectionable noise, caused by the hitting of the hind shoe against the fore. Young animals are most liable to click, but as they acquire strength, and if they are judiciously driven, they often discontinue to click. A clever shoeing smith can, in many cases, to a great extent prevent a horse from clicking.

SORE THROAT.

There are many causes of sore throat.

Chills, influenza, bad drains, sea voyages, irritant foods and drugs, accidental swallowing of things the "wrong way," strangles, etc.

Symptoms of sore throat :—Shivering and staring coat, quidding the food, poking out the nose, nodding the head continuously, cough, restlessness, loss of appetite.

Treatment.—Clothe the body, bandage the legs, apply the Elliman's with a sponge, and then well rub it in with the hand, and lastly put on a hood ; repeat daily.

The rest of the treatment must be guided by the special cause, if determinable. The horse owner will be doing right in applying Elliman's at first, but the aid of a veterinary surgeon may be necessary in severe cases, both for local and general treatment. The cough mixture upon p. 95 may be given with advantage.

ROARING.

Causes.—Influenza, sore throat, cough, neglected cold, hereditary predisposition. The various degrees of this affection are described as :—whistling, thick wind, and roaring, but the causes are very much the same, only that thick wind is more frequently the sequel of bronchitis.

It is not too much to say for Elliman's that roaring may be prevented by its timely use.

Trainers of racing stock attach the greatest importance to the least sign of catarrh, as evidenced by sore throat or cough.

Treatment.—The same as for sore throat. A tube, introduced into the windpipe, may be necessary.

COUGH.

A noise made in the effort to expel some foreign matter, or some secreted matter in the air passages, causing irritation.

If the irritation exists in the fauces or the larynx, the throat from ear to ear should be well rubbed every day with Elliman's, and the rubbing should be continued down the windpipe until the parts become sore—the horse should be fed on green meat if it can be obtained; if it cannot, then upon crushed oats, bran, and a little chaff scalded together; pour boiling water upon the food, then cover over for a time and give a fair feed of the mixture, when cool, four times a day; carrots should be given, but little, if any, dry food. The legs should be kept warm with woollen bandages; the horse should be well clothed, and kept in a *well-aired* loose box. Draught should be avoided.

Small doses of digitalis, tartar emetic, and nitrate of potash made into a ball with tar, and one given every night, have often produced a very beneficial effect. The proportions should be ½ drachm digitalis—1 drachm tartar emetic—2 drachms nitrate of potash. Linseed tea should be given as a drink. An excellent prescription is to be found upon p. 95—cough mixture.

CHRONIC COUGH

may proceed from worms; there is much sympathy between the bowels and lungs; in such case the treatment at p. 77 is recommended; it may proceed from distended stomach pressing upon lungs that have become enlarged from loss of contractile power—in such a case judicious feeding would greatly help. All

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food should be damped, he should be given a little at a time, though oftener than he would be usually fed—his drinking water should always be within reach.

COMMON COLD.

A horse affected with cold has almost always a sore throat, more or less, besides which the glands of the throat and those under the jaw are swollen, tender and disordered, even if there is no apparent enlargement to the eye

The importance of early treatment has been already alluded to in connection with roaring.

Treatment. — Clothe the body well, but give fresh air, avoid draught. Apply the Elliman's vigorously to the throat and under the jaw, as previously directed. By this means the effusion is diverted from the delicate membrane of the air passage to the loose tissue under the skin, and nature is able to absorb it.

Steaming the head by means of scalded bran in a nose-bag is helpful. Care should be taken not to make it too hot, or, as a horse's muzzle is easily injured, it would have additional trouble in eating.

The food should be moistened, and all dusty or damaged hay avoided when the horse has recovered.

STRANGLES.

Most young horses at some time or other suffer from strangles, which develops a tumour in the channel between, or at the side of, the jaws. The horse at first appears dull, off his feed, has a husky cough, has a discharge from the nostrils, sometimes also from the mouth, and a weeping from the eyes; he is said to be sickening for strangles. As the disease progresses, thickening between the jaws appears, and the formation of the tumour is observed. The cough at this stage causes breathing to be difficult, and swallowing becomes painful, hence the name of "Strangles."

Elliman's should be gently rubbed, with a piece of sponge, into the tumour every night and morning, to bring about a speedy suppuration. As soon as the tumour becomes soft, and the fluid can be fairly detected, it should *be freely lanced*. The abscess must mature properly before being lanced. See "Abscess," p. 51. Subsequently, the treatment will consist in keeping it clean, and in dabbing it with Elliman's, on a sponge, daily. The feeding of a horse, while suffering from strangles, should consist of bran mashes with crushed oats, green meat, and carrots if they can be obtained. A bucket of linseed gruel should be within his reach.

Strangles is an infectious disease, and all horses so infected should be isolated, and when the horse has recovered, the stable and utensils should be carefully disinfected. See p. 89.

CONGESTION OF THE LUNGS.

There is a great distinction between congestion and inflammation of the lungs of horses, not made in regard to man.

Congestion is engorgement, and the cause, as a rule, over-exertion when out of condition. It is, therefore, most frequent among hunters at the beginning of the season and after a big burst across country.

A horseman should recognise the early signs, and first turn his hunter's head to the wind and then to the nearest way home.

Treatment.—At the first signs of blowing and distress, with dilated nostrils and heaving flanks, it is well to give a rapidly diffusible stimulant. A gill of brandy at the nearest inn, or a draught of ammonia (aromatic spirit), an ounce in half-a-pint of cold water, at the first chemist's at which it is obtainable should be administered.

As taking a distressed horse home may prove fatal, it is well to put him up as soon as a suitable place can be found.

While a messenger is dispatched for a veterinary surgeon, the attendants should apply the Elliman's to the throat and both sides of the chest, rubbing it into the ribs for ten or fifteen minutes.

Elliman's, in the palms of the hands, should be employed in vigorously rubbing the legs until they respond by becoming warm. It is desirable to clothe the horse well, not forgetting the hood, but his head must not be poked into a corner where the air of the stable is bad; and failing a large, loose and well-ventilated box, he should be tied up facing an open door, fresh air being essential to his recovery.

INFLAMMATION OF THE LUNGS.

This is not sudden engorgement, as in the congestion above described, but of slower development. All the lung substance may be involved, or one side only.

Professional assistance should be obtained and, while waiting, the Elliman's may be rubbed into the sides of the chest and legs as recommended in congestion of the lungs. Warm clothing, a good bed, and pure air are necessary, and careful dieting on soft food.

BRONCHITIS.

The amateur has usually less difficulty in diagnosing this form of chest affection than the others, as the horse makes a noise in breathing and coughs in a way that shows pain in the act. The causes are the same as inflammation of the lungs and common cold.

Treatment.—Rub in the Elliman's from the throat to the breast all the way down the windpipe, and again behind the

elbows along the ribs. If professional aid cannot be summoned, the cough mixture given upon p. 95 may be tried, a dose being given every four hours, or one ounce of aromatic spirit of ammonia (sal volatile) in half a pint of cold water. The dose to be given every eight hours until relief is obtained.

This will be found a good remedy in any of the diseases of the chest, but we always advise calling in the services of a veterinary surgeon in all serious cases, and in giving advice upon others we do not in any way seek to supplant professional skill.

BROKEN WIND

Is the result of injudicious feeding; when horses are fed on coarse, bulky food, the stomach becomes distended and presses upon the lungs; irritation is caused; enlargement and loss of contractile power follows, and the respiration is impeded.

Broken wind is distinguished by a short, dry, husky cough, and by the tucking up of the abdominal muscles, in the act of respiration. A broken winded horse cannot be cured, but much can be done to relieve him. He should be fed on nutritious food occupying little space in the stomach, a liberal allowance of oats with hay, chaff, and bran, damped together; carrots may be given with advantage. He should be put on moss litter, that he may not have the chance of eating his bed, and he should always have water within reach.

PLEURISY.

Cause.—Exposure, sudden changes, as from the warm stable to standing at a draughty street corner. Farmers' horses get it while standing after sweating at ploughing (while men go under shelter to dinner).

Shivering, grunting with pain on being turned round, rapid breathing, and a dry, hacking cough are the common symptoms.

Treatment.—The outside of the pleura being near the chest wall is the part most often affected, and Elliman's promptly applied is almost a specific. It draws out the inflammation before it has time to form bands of lymph. which afterwards have the effect of fixing the membrane to the sides of the chest for life. A veterinary surgeon should be called in.

COLIC AND INFLAMMATION OF THE BOWELS.

Colic, gripes, or fret, as the disease is variously called in different districts, is caused by indigestion, unsuitable food, exhaustion, and drinking cold water on a full stomach, and, occasionally, on an empty one.

There are two sorts of colic, one known as spasmodic and the other distinguished as flatulent. In the former the bowel is constricted at places, and great pain is the result. It is a spasm of the muscular layer of the gut. Flatulent colic is slower, as a rule, in coming on. With the increase of gas in the bowels the pain increases and the animal is much distended, the sides feeling like a drum. There is always danger in colic, and professional assistance should be called in.

Treatment.—While waiting for a veterinary surgeon, rub Elliman's into the belly, all over it from the last rib to the hip. Avoid the teats of a mare and the sheath of a gelding.

A good colic draught is the following:—

Spirit of Turpentine - - - - -	2 ounces.
Sweet Spirit of Nitre - - - -	1 ounce.
Tincture Opium - - - - -	1 ounce.

To be given with half a pint of warm water.

Or . . . give

Sal Volatile - - - - - -	1 ounce.
Spirit of Nitre - - - - - -	1 ounce.
Powdered Capsicums - - - - -	1 drachm.
Turpentine - - - - - -	2 ounces.
Linseed Oil - - - - - -	½ pint

Mix and give in a pint of gruel.

Prevention.—*With the exception of a few hereditary cases, colic is practically preventable. Mismanagement is responsible. Bad food, irregular meals, and working the horse when in an exhausted state, are causes of Colic.*

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INFLAMMATION OF THE BOWELS.

No more dangerous illness can attack the horse than this; and as the symptoms so nearly resemble those of colic at first, we repeat our advice to seek the services of a competent veterinary surgeon in every doubtful case. Only the expert can distinguish between inflammation of the bowels itself (enteritis) and inflammation of the investing membrane of the abdomen (peritonitis). Send immediately for veterinary surgeon.

The causes are obscure, but supposed to be very much the same as those which induce colic (see p. 72).

Treatment.—Wring out a sheet in hot water, rub the Elliman's all over the belly, and lose no time in covering it with the sheet and, afterwards, with woollen blankets or other clothing, to keep in the heat. At once duplicate the sheet and blankets, so as to be ready to clap them on immediately when changing them, to prevent the great risk of a chill from evaporation while the sheet is off.

If hot packing or fomentation, or, we may add, poulticing, cannot be done well, it had better not be done at all. Better trust to the Elliman's entirely than poultice or foment indifferently. For internal medicine, opium or its preparations are and have been in great repute from time out of mind. Two scruples of powdered opium in a little warm water should be given every six hours. Aperients should not be given, but time allowed for the natural action of the bowels to be restored when the inflammation has abated.

ACCIDENTAL (Traumatic) PERITONITIS.

Inflammation of the investing membrane above referred to may follow on castration or external injury.

Treatment in such case consists in applying the Elliman's all over the belly, and the administration of opium in balls or as a tincture (laudanum).

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CONGESTION OF THE LIVER.

Horses habitually fed on corn and never turned out to grass are subject to liver disorders. Influenza is among the most frequent causes of congestion of that organ. Errors of diet and bad air contribute their quota as well. Impaired appetite and yellow membranes of the eye and mouth are pretty sure signs.

Treatment.—Complete change of diet, a dose of aloes, or a daily dose of three ounces of Epsom salts, administered in a mash, or in the drinking water, for three or four days, and daily application of the Elliman's to the right side, beginning at the last rib and going backwards for two hand's breadth. Blisters are not desirable, but a continuance of the Elliman's will so act upon the superficial nerves as to react on those nerves which direct the functions of the liver.

CHILLED LOINS.

Clipped horses exposed to the wind are apt to get a chill across the loins. It is made manifest by such stiffness next day that the victim gets up with difficulty and turns with a groan.

Elliman's is the proper remedy for this condition. Its operation will be helped by first bathing the affected parts with warm water (see FOMENTATION, 22). The great muscles of the back are subject to deposition of effete material, which produces a sudden form of paralysis known as azoturia. It comes on very soon after a horse has started on a journey. The treatment consists in giving a bold dose of physic and rubbing in the Elliman's over the loins daily.

MEGRIMS.

This may arise from determination of blood to the head, causing pressure on the brain. The horse may not have been doing much work, has got too fat, made too much blood; may have been driven too far or fast in an oppressive atmosphere; the collar may have been too tight—he will suddenly stop, shake his head, tremble, be giddy; he may altogether lose consciousness, and fall. After about five minutes, he will gradually recover, he will appear

dull and more or less exhausted. He should be led or driven home as quietly and gently as possible; a dose of physic containing four or five drachms of Barbadoes aloes should be given; he should have bran mashes. After the direct effect of the physic has passed off, alteratives may be given with advantage (see recipe for alterative powders, p. 96). The allowance of corn and hay given previous to the attack should be reduced.

A horse that has had more than two attacks of megrims is very unsafe to drive.

WORMS IN HORSES.

Those from which horses mostly suffer are the long white worm (*lubricus teres*), and the small darker-coloured worm (*ascaris*), often called needle worm. The former are from six to ten inches long, and inhabit the small intestines, and when they exist in any quantity they materially interfere with the condition of the horse, as they feed on the nutritive part of the food, or mucus of the intestines. The best treatment appears to be to give, according to the size of the horse, from one to two drachms of tartar emetic, mixed in a little damp food, every day for six days, an hour before the horse is fed, then to mash him for a day, and, having so done, to give a dose of physic, say five drachms Barbadoes aloes, or, fast the horse for twelve hours, then give a draught composed of one pint of linseed oil with two ounces of turpentine added. Mix.

The smaller worm (*ascaris*) inhabits the larger intestines, the cœcum and rectum, where they are often found in large quantities. They are a great annoyance from causing much irritation about the fundament. A dose of physic will bring away a great number. If they exist in the rectum, an injection of linseed oil, or of an ounce of aloes dissolved in warm water, is the most effectual remedy.

HIDE BOUND.

This is diseased state of the skin, brought on by a deranged state of the digestive organs. The animal should have linseed mashes, one daily or three times a week, according to results : or cod liver oil, two to four ounces daily ; or linseed oil, two to four ounces daily, may be given in the food. He should be liberally fed, and a fair allowance of bran given when obtainable. He should be well groomed and regularly exercised. A light dressing of Elliman's every other day for a week will stimulate and restore healthy action to the skin. Elliman's should be applied with a sponge ; the sponge should be wetted with it and fairly wrung out, and then gently rubbed on to or wiped over sufficiently to damp the skin. Alteratives should be given (see recipe for ALTERATIVE POWDERS, p. 96).

BOTS IN HORSES.

At the end of Spring, horses sometimes evince considerable irritation and itching, and the groom, on raising the tail, finds a bot clinging to the side of the anus. He is perhaps startled, and thinks that something is seriously wrong ; such, however, is not the case ; he can pick off the bot, and the irritation will subside until he finds others there, which he can, in like manner, remove.

In the latter parts of the summer, a fly, known as the horse-fly, or as the gad fly, deposits her eggs on the hair of the horse : these he licks off ; then warmth and moisture hatch the eggs, which contain minute worms ; they are carried with the food into the stomach, they fasten tightly on to the coat of the stomach, where they remain, nourished by its mucus, until, having become fully developed, they drop off, and are, with the other contents of the stomach, carried along the intestines and evacuated. To hasten the evacuation, fast the horse for twelve hours. See treatment for worms, p. 77, lines eight and nine from bottom.

RINGWORMS IN HORSES.

They are very unsightly and very contagious. A little strong mercurial ointment should be worked into them with the point of the finger. One dressing is generally sufficient to destroy them. Subsequently a little Elliman's should every other day be dabbed on the part to promote the growth of hair.

WARTS.

They should be cut off, and, if small, the roots cauterised with lunar caustic; if large, after they are cut off, the roots should be seared with a red hot firing iron.

GLANDERS.

This is perhaps the most serious disease affecting horses. In cases of suspected glanders a veterinary surgeon should at once be called in, who will, in most cases, be able to give a decided opinion. When a horse is suspected of being glandered, he should at once be isolated, so that there can be no possibility of communicating the disease. The symptoms that can be observed by the horse owner are, in many cases: the unthrifty condition of the animal, a discharge from one or both nostrils, most often from one only, and that generally the near; the lining membrane of the nostrils is a leaden, unhealthy colour, and ulcers are often to be detected upon it; the discharge from the nostrils will be continuous, and of a sticky, glue-like nature, quite different from the discharge of catarrh; the gland or glands, on the side or sides from which the discharge comes, will be found to be enlarged, and closely adhering to the side or sides of the under surface of the jaw or jaws. If these symptoms exist, and the owner of the animal is unable to obtain the services of a veterinary surgeon, it would be best for him to have the animal destroyed, as there can be little doubt as to its being a case of glanders. The horse having been destroyed and buried with quick lime, it will be necessary to have the stable, clothing, harness, and utensils thoroughly disinfected; the litter should be burnt.

MANGE IN HORSES

Is a disease much to be dreaded; it is a pimply eruption of the skin, attended with much itching and tenderness: the skin becomes thickened and puckered. Mange generally appears at the roots of the mane. Contagion is the chief source of mange; next to that, poverty or general debility. Sulphur appears to be the chief agent in the cure of mange; a dose of physic, containing four or five drachms of Barbadoes aloes, should be first administered, then the following ointment, well rubbed in with the hand or soft brush:—

4 ounces of Elliman s.
2 ounces Strong Mercurial Ointment.
1 pint of Common Oil.
Flowers of Sulphur enough to make it into a thick ointment.

First rub down the mercurial ointment with the Elliman's, gradually add the oil; then stir in the sulphur to form ointment. This ointment should be rubbed in with a soft brush every day for four days: a careful inspection should be made to see that every affected part has been dressed. On the fifth day the animal should be well washed with warm water and soft soap. In many cases it will be necessary to repeat the dressing as before.

Should the above dressing fail to effect a cure, sulphur, mixed with oil of tar, may be tried with good effect; it should be applied as before recommended. The patient should be fed with a fair allowance of oats, with hay, chaff, and bran, as much green meat as he will eat; carrots will be beneficial.

A cure having been effected, it will be imperative that the whole of the stable with which he could have been in contact should be thoroughly scrubbed with soap and water, and afterwards with chloride of lime and water. The clothing and utensils must be similarly treated, and the harness re-lined.

HARD UDDERS AND GARGET.

Many a good colt might be saved by a little Elliman's being rubbed into the mare's udder. Especially is this the case with fillies allowed to breed at three years old.

The bag is hard and tender, and the colt punches it to make the milk flow. The impatient young mother either kicks the foal, or else refuses it the chance to suck.

Treatment.—Tie up the mare, hold up a fore-leg, and with the Elliman's at half-strength knead the udder with both hands for several minutes, three times a day, milking out as much as possible with finger and thumb, and after wiping dry, hold up the colt to suck.

The relief is so soon felt that, after the first performance, the most irritable filly will usually submit to the operation.

Prevention.—Examine the udder when the foal is expected and the "wax candles" are showing, and feel the state of the bag. If it is hard and tender, soften it with diluted Elliman's and endeavour to get out a little milk. If hand milking has to be done, to prevent garget, a disease in the udder, then the colt should have a dose of castor oil, which would not otherwise be necessary, as the first milk contains a natural aperient.

GARGET.

A neglected case of hard udder will run on to abscess or garget.

Treatment.—Take away the foal and find a foster-mother. Poultice the udder, if the mare will submit to it. If not, the abscess may be induced to point by freely using the Elliman's. When ripe it should be lanced, a veterinary surgeon will know where to expect a blood vessel, and will not wound it (see Abscess, p. 51).

THE TEETH.

THREE-YEAR-OLD MOUTH.

B. Anterior maxillary bone.

1. 1. Central permanent nippers, quite full-grown

2. 2. Milk teeth worn down.

3. 3. Corner milk teeth, still showing central mark.

4. 4. Tushes concealed within the jaw.

MOUTH OF THE COLT AT FOUR-AND-A-HALF YEARS.

A. Anterior maxillary bone.

1. 1. Central nippers, considerably worn down.

2. 2. The next pair, fully developed, with their edges slightly worn.

3. 3. Corner permanent nippers, in a state of growth, with the edges of the cavity sharp, and the mark very plain.

4. 4. The tushes showing themselves through the gum, but not full-grown (not seen in the mare).

UPPER NIPPERS AND TUSHES AT FIVE YEARS OLD.

1. 1. Central nippers, with the mark still unobliterated.
2. 2. Next nippers with the mark still plainer.
3. 3. Corner nippers with the edges very slightly worn.
4. 4. Tushes, well developed, and still showing the groove on the outside plainly (only seen in geldings).

LOWER NIPPERS AND TUSHES AT FIVE YEARS OLD.

1. 1. Central nippers with their marks almost entirely worn out.
2. 2. Next nippers, showing marks partially worn.
3. 3. Corner nippers, with the mark plainly seen, but the edges partially worn.
4. 4. Tushes, with the grooves inside almost obliterated (only seen in geldings).

THE LOWER NIPPERS AND TUSHES OF A SIX-YEAR-OLD HORSE.

B. The lower jaw.

1. 1. The central nippers, with the marks worn out.

2. 2. The next nippers, with the marks disappearing.

3. 3. The corner nippers, showing the marks plainly enough, but with the edges considerably worn.

4. 4. The tushes standing up three-quarters of an inch, with their points only slightly blunted (only seen in geldings).

UPPER NIPPERS IN THE EIGHT-YEAR-OLD HORSE.

A. Anterior maxillary bone.

1. 1. Central nippers, worn to a plain surface.

2. 2. Next pair, still showing a slight remnant of the cavity.

3. 3. Corner nippers, showing the mark plainly enough.

4. 4. Tushes, more worn down than in the lower jaw of the six-year-old mouth (only seen in geldings).

LOWER NIPPERS AND LEFT TUSH OF A VERY OLD HORSE, THE RIGHT TUSH HAVING FALLEN OUT.

CRIB BITING.

This is a serious defect: it causes loss of condition and waste of corn, and renders the animal more liable to colic.

A strap, buckled tightly round the neck, will prevent crib biting; but the constant pressure on the wind pipe is apt to produce a worse affection. A muzzle, with bars across the bottom, is the best preventive; the bars must be wide enough apart to enable him to feed, but not to bite the manger.

DISINFECTION OF BUILDINGS.

The germs of infectious or contagious disease may remain for months, or longer, if not destroyed, hence the disinfection of buildings in which such disease has existed, should be carefully carried out. Fire is the most effectual of many known disinfectants. The walls should be burnt, the woodwork should be charred, and the ironwork heated. All this can be done by a torch or by the painter's grate, such as is used by them to remove old paint. After the burning, the walls and the woodwork should be scraped, then covered with quick-lime wash. The litter should be burnt on the floor, which should afterwards be covered with thick quick-lime wash.

The drains should be flushed with a solution of carbolic acid. If the buildings are covered-in ones, every aperture should be stopped while vessels of burning sulphur are giving off gas. The building should not be opened until forty-eight hours have elapsed.

CARE OF HORSES.

That proper care and hygienic conditions conduce to the welfare and longevity of horses is proved by the carefully-preserved statistics of the army horses, and also of the great studs kept by omnibus and other trading companies who employ large numbers of animals.

Stables should be lofty and well ventilated, but free from draught. Ventilation, properly carried out, ought to ensure these conditions. Bad air, as that on shipboard, irritates the mucous membranes and produces catarrh. Because chills were first recognised as a cause of catarrh, the disease was properly named "cold" or a cold. The vitiated atmosphere of a town stable of the old type is, however, a much more frequent source of catarrh than exposure to inclement weather. Young horses coming up to London in the pink of health are just the ones to be affected by the foul air, and many losses are sustained by owners of animals which fail to become acclimatised.

Horses at work are estimated to consume about 16,000 cubic

feet of air per hour. The amount of cubic space in a stable is not, however, an absolute measure of its air capacity, as, in two stables of exactly the same size, the exhausted air may pass out rapidly in one and pure air be as freely drawn in, while in the other the arrangements may be such as to prevent free circulation. The heavier gasses are the slower to diffuse themselves; but ammonia, which is such a light gas and so large a product of the horse stable, quickly vitiates the atmosphere unless the ventilation is on sound principles.

DRAINAGE OF NO LESS IMPORTANCE.

No drain inside a stable should be covered. The master can then see at a glance if the gutters have been cleansed, and no stale dung and urine can accumulate without the attendant's knowledge. The presence of fresh droppings or of recently-passed urine is no detriment to the health of man or beast, but the decomposition that follows in blocked-up pipes or under iron plates not thoroughly washed every day is most injurious.

WATER.

The amount of water required by a horse differs greatly according to his work, his food, and the temperature of the air. An average allowance, according to the best army observers, is six gallons per day. The allowance on board ship is only five, but it is found quite sufficient when there is no exercise taken.

When to water. Before hygiene was understood it was the almost universal custom to withhold water from a horse when he came in hot or was on a journey. It was thought to produce colic, and in some instances would do so, when very cold water was given in reckless quantity to a horse suffering with thirst. Again, we would refer to the cavalry and other army horses as examples of good management, and say that, since horses have been watered before feeding, the number of gripe cases has diminished by more than half. The physiological explanation is, that the water passes in two or three minutes into the large

bowels, and is absorbed into the circulation before the food given a few minutes later has the opportunity of becoming saturated and afterwards swelling up or fermenting. Water given on the top of a hastily-swallowed feed of corn is liable to check digestion, and to swell up the corn to such an extent as to cause rupture of the organ. Soft water is preferable for many reasons, not the least of which is the tendency of hard water to produce gripes, and to form calculus or stone in the bowels and bladder. The supply of soft water is, unfortunately, seldom pure. On farms, the pond receives the surface drainage of any land higher up than itself, or from the yard itself, and the water becomes the colour of coffee. It must, however, be said that such discoloured water is often preferred by horses, and particularly by cattle, and the proofs of its bad effects are wanting.

FORAGE.

It is not, perhaps, generally known that, until the present century, barley was the grain on which horses were usually fed. It is still sometimes given to them, but the superiority of oats is unquestionable. Until the advent of the chaff-cutter, corn was given whole or, at best, bruised. Whole oats, given without chaff, are apt to pass through the body without being acted on by the digestion, and the system of adding chaff to the feed has the effect of making the animal grind his food better. He cannot swallow a lump of dry hay or chaff; it has to be insalivated first

Digestion in the horse cannot be complete without some amount of distension. Although a single-stomached animal, and that stomach a small one, he must have bulk; nutrition is not everything. All the elements may be found in neat corn to sustain him, but he will thrive better on a less quantity with some long stuff added. The quantity of oats necessary for the maintenance of a horse in health will depend largely upon the nature of his work. Race horses are induced to eat all the good oats they can, but the conditions of training do not apply to general feeding. Ten to 12 lbs. is a fair allowance for a saddle horse or hackney, 12 to 14 for a cart horse, and, if beans or peas are given, a

corresponding amount of oats should be deducted. The army ration is 10 lbs. The Government weight required for oats is 36 lbs. per bushel.

Hay.—Horses doing fast work are given a large proportion of corn and but little hay; hence the racer eats the least hay, and the farm and heavy draught animal the most. For the light breeds, about 12 lbs. a day is enough, including that which is cut up into chaff. Double that quantity is not too much for a wagon horse.

Maize.—This corn is largely used as being cheap and sustaining, but it has nothing like the feed value of a corresponding weight of oats. Too much maize is productive of colic and conduces to swollen legs.

Beans and Peas.—These highly stimulating foods are only proper for horses called upon for very severe work, and no large quantity should at any time be given—1 to 2 lbs. per day.

Wheat.—As a horse food, wheat is not suitable. It is a cause of indigestion and generally believed to bring on fever in the feet.

Straw.—The straw of wheat or oats may be given to horses in moderate quantity without injury, as chaff, or in place of hay.

Bran Mashes.—If a dry diet is given, with no green meat, it is necessary to let horses have a bran, or bran and linseed, mash, at least once a week: but horses differ very much in respect to the effects of dry feeding; some get dangerously constipated without frequent mashing, whilst others, of excitable temperament, need peas and other things to hold them together.

TIMES OF FEEDING.

The horse's stomach being small in proportion to his size, it is desirable that he should be fed often, say every four hours, or three times a day, and the bulk of his hay should be given at night.

GROOMING.

Horses undoubtedly thrive best when well groomed. A good strapping every morning brings the blood to the surface, and promotes circulation generally.

MANAGEMENT OF THE FEET.

As the horse's feet should be picked out every morning when the stable is "mucked out," there is no excuse for loose shoes going unnoticed. The wear differs much, but as a general rule the shoes should not be kept on more than three weeks, because the foot of a healthy animal will have grown so much by that time as to overlap the shoe, break away from the clenches, or press upon the bars and lay the foundation of corns. If not worn thin they may be put in the fire and replaced when altered to fit. Brittle Hoof, see p. 64.

STOPPING THE FEET.

The custom of stopping with cow-dung or other softening material is not generally a desirable one. Water is all that a healthy foot requires.

BEDDING.

Of all bedding, nothing looks so comfortable and cheerful as good long wheat straw. Oat and barley straw are more quickly broken up and saturated by the urine. With some horses it is necessary to use other bedding, as they will eat all the straw within their reach, and so bring on digestive ailments and broken wind

Pine shavings, peat moss, sawdust and ferns are used for bedding, but gross feeders will often devour ferns, and a few will even eat moss litter.

A GOOD STRAPPING EVERY MORNING PROMOTES CIRCULATION.

MEDICINES TO KEEP IN STORE.

Where the services of a veterinary surgeon cannot be obtained, it would be advisable to keep the following preparations in store.

PHYSIC MASS.

Barbadoes Aloes	8 parts.
Olive Oil	1 part.
Treacle	3 parts.

The Aloes should be broken into small pieces and melted with the Oil in a hot water bath, then the Treacle added and the Mass stirred until cool.

Dose, from six to nine drachms. The horse should be well mashed before having the physic, and the mashes continued during the purgation.

DIURETIC MASS.

Resin finely powdered. Nitrate of Potassa, Yellow Soap, in equal parts, well beaten together. Dose, 1 ounce to 1½ ounces.

TONIC MASS.

Sulphate Copper	2 ounces.
Ginger Powder	2 ounces.
Linseed Powder	6 ounces.
Treacle	6 ounces.

Well beaten together. Dose, 1 ounce to 1½ ounces.

CORDIAL MASS.

Caraway Powder, Gentian Powder, Ginger Powder. Of each equal parts, with Treacle sufficient to form a Mass. Dose, from 1 ounce to 1½ ounces.

COUGH MIXTURE.

Paregoric Elixir	1 ounce.
Sweet Spirit of Nitre	1 ounce.
Glycerine	2 ounces.
Linseed Oil	4 ounces.

Mix for one draught.

MEDICINES TO KEEP IN STORE.—Continued.

FEVER BALL.

Tartar Emetic	½ drachm.
Camphor	½ drachm.
Powdered Nitre	2 drachms.
Palm Oil	sufficient to form a ball.

One may be given twice a day.

FEVER DRAUGHT.

Sweet Spirit of Nitre	2 ounces.
Powdered Nitre	2 drachms.
Camphor	½ drachm.
Tartar Emetic	½ drachm.
Water	½ pint.

One may be given every night.

COLIC DRAUGHT.

Sal Volatile	1 ounce.
Sweet Spirit of Nitre	1 ounce.
Powdered Capsicums	1 drachm.
Spirit of Turpentine	2 ounces.
Linseed Oil	½ pint.

Mix and give in a pint of gruel.

Or give—

Spirit of Turpentine	2 ounces.
Sweet Spirit of Nitre	1 ounce.
Tincture of Opium	1 ounce.

To be given with half pint warm water.

ALTERATIVE POWDERS.

Black Antimony	2 parts.
Powdered Nitre	3 parts.
Flowers of Sulphur	4 parts.

A large table-spoonful to be given every night in a mash.

USEFUL ANTISEPTICS are:—

For the Eyes and Mouth.

Boracic Acid, 10 per cent. Solution

For Sores on the Udders of Cows in Milk.

Boracic Acid as an Ointment (1 in 6).

For external Sores and abrasion of the Skin; Sore Udders of Cows not in milk.

Elliman's Embrocation diluted, 1 part to 10 parts of water; or Carbolic Acid, 5 per cent. Solution.

For the Disinfection of Dairy Utensils.

Boracic Acid in Solution (5 per cent., or 1 in 20).

For the Disinfection of Stables, Byres, Kennels, Harness, Stable Utensils.

Carbolic Acid, 5 per cent. to 20 per cent. Solution.

Always use clean material in the treatment of external sores and abrasions of the skin.

ELLIMAN'S
RHEUMATISM
ROYAL EMBROCATION
EMBROCATION
Fannie Moody

PART II.

DOGS.

ASTHMA.

Indigestion is a frequent cause of asthma.

Treatment.—Only palliative remedies can be given. Inhalation of steam often proves beneficial; a tea-spoonful of liquid tar may be added to a pint of boiling water.

Feed only in small quantities at a time.

ABSCESS.

Under the name of abscess there are two distinct kinds of swellings containing matter.

The causes are much the same, namely: blows, bites, stings, and thorns.

The most frequent are the class called serous, and the situation of them is about the head and neck. These are the parts where dogs grapple with one another, either in earnest or in those mimic battles in which pups specially delight to engage.

The symptoms of abscess are sudden swelling, great tenderness and stiffness; often the ear flap is affected: it is filled with fluid and stands up, though it may belong to a lop-eared animal.

Treatment.—In the majority of cases, the matter can be entirely dispersed by using Elliman's. It should be rubbed in night and morning with a good deal of massage.

If too late for dispersal, it will be necessary to run a seton through it. A large and sharp needle, threaded with unbleached tape and saturated with Elliman's, should be passed from the

highest point to the lowest and pulled backwards and forwards at least once a day.

This treatment prevents the re-formation of abscess, causes a healthy discharge, and leaves no blemish.

If the inside of the flap of the ear is involved, it is no use to apply the Elliman's as a preventive, but the skin on the hairless portion should be ripped up from end to end and a pledget of tow, dipped in the Elliman's, must be squeezed into the wound.

If this is not done, it fills up again in a single night.

The other sort of abscess is what is commonly called a boil, in human flesh, and contains pus or thick matter, instead of the straw-coloured thin fluid found in serous abscesses.

The formation is slower and even more painful. Dispersal is not very hopeful unless the first appearance of swelling and tenderness is detected. The employment of the Elliman's is here recommended to bring the abscess to a head, or as the surgeons say, make it "point." When a thin place can be distinctly felt, it is time to lance it. There should be no hesitation, a bold stab hurts less than a nervously given one, and will let all the matter out at once.

The discharge is to be encouraged by warm fomentation, not hotter than one can bear the elbow in, and should be followed by a dressing with Elliman's inside the new-made wound. A healthy action is thus set up, and early and complete recovery may be looked for.

BRUISES.

Dogs of every breed are extremely liable to bruises, caused either in their sport or in the service of their masters, and, it must be added, by the wilful brutality of persons who dislike them.

Treatment.—As soon as the injury is discovered, bathe with warm water and apply the Elliman's. Repeat next day and in all probability it will be cured.

BITES.

These are in the nature of punctured wounds, and in other animals should be enlarged, but with dogs it is seldom necessary. The application of Elliman's to the wound, and a good rubbing all round about the place, will, with very few exceptions, result in a speedy cure. If it does not do so, an abscess may be looked for. (See ABSCESS, p. 99.)

Dogs of the bull type sometimes inflict much more serious injuries, and a lacerated wound is the consequence. (See CUTS AND WOUNDS, p. 111.) In connection with bites we feel it incumbent upon us to take the opportunity of saying a few words on

RABIES,

not that we have any remedy to offer, but because erroneous statements are made in the daily press on this very important subject.

Rabies does not arise spontaneously.

It must be communicated by the bite of, or inoculation by, another animal who is himself *affected with the disease at the time.*

No treatment is of the least use.

The danger to human life makes it the duty of every dog owner to destroy an animal that has been bitten by a rabid dog.

A dog that has bitten a human being, or another dog, should *not* be *immediately* destroyed.

He should be put in a place of security, and kept under observation for *nine* to *fifteen* days.

If rabid at the time of inflicting the injury, he will be dead before the expiration of the quarantine above prescribed.

BLADDER.

The dog's bladder is occasionally the seat of inflammation.

Causes.—Kicks, blows, falls, the presence of stone, and the administration of improper drugs or the use of unsuitable liniments.

Treatment.—A dose of castor oil, a smart rubbing of Elliman's over the loins. An egg-spoonful of bi-carbonate of soda in a table-spoonful of milk, once or twice a day for three or four days. Diet to consist principally of milk and light puddings. In severe cases the catheter has to be passed. Keep the dog away from draughts and place him in blankets.

BLOOD DISEASES.

Anæmia, or Poverty of the Blood, is a condition which the intelligent amateur can easily recognise by the extreme pallor of the visible membranes of the eye and mouth.

Causes.—Insufficient food, digestive failure, and bad ventilation, with inadequate playground in the case of pups, and with bitches, exhaustion from suckling too many pups or for too long a time.

Stud dogs may be so much used as to bring about the same condition.

Treatment.—A mild aperient to carry off fermented ingesta. Good nourishing food at regular intervals. Parrish's food in tea-spoonful doses, morning and night, after food. Beef tea, broth, and nourishing liquids. Gentle exercise increased daily. Dry, well-drained bed. For medicine, give from one to six grains of saccharated carbonate of iron, night and morning, as a powder on the tongue, or in the food, if the dog will take it. The general tone of the wasted muscles may be improved by plenty of brushing and finally by hand rubbing with a little Elliman's, which will act on the superficial nerves and increase their nourishment.

BROKEN BONES.

Dogs are oftener the subjects of these accidents than any other domestic animal.

The causes are not far to seek. In many a man's out-door pursuits the dog has a share. His courage makes him run into all sorts of danger, and his pluck gets him crushed beneath a foot or a wheel, within sight of those who most care for him.

Simple fractures will usually reunite, except in very old dogs, and restoration to soundness may be looked for.

Compound fractures, with wound or open joint, do not offer much prospect of recovery.

All that is necessary to set a broken bone successfully is to bring the ends together and so secure them in apposition that they shall not be disturbed until nature has thrown out some plastic material which later on will turn into bone.

A padding of soft stuff should be placed next the skin, and the splint be made as light as possible, consistent with strength.

Stiff brown paper is strong enough for some tiny terriers and fancy dogs, while the massive St. Bernards will require gutta percha and wooden splints of stout substance. In the case of a broken leg, the bandaging should commence from the foot and be rolled on upwards. Without this precaution, the foot swells and the splints may have to be removed at a critical time in the repairing process. A veterinary surgeon should be employed in case of fracture.

The time to apply Elliman's is when the splint is removed and a callus remains. The lameness is prolonged by the presence of this superfluous material; and Elliman's will assist nature to remove it in half the usual time, and give renewed strength and vigour to the wasted muscles that have been thrown out of use. The Elliman's should be employed in small quantities, and with plenty of gentle but sustained friction with the hand.

BOWELS.

Inflammation of the bowels is frequently fatal in dogs.

Causes.—Chills, neglected colic, impaction, lodgment of bones and foreign bodies, and sometimes it comes as a sequel of distemper, or from eating putrid matter.

Treatment.—Calomel and opium are old-fashioned remedies, and have been found of most value.

One grain of calomel to two of opium for a medium-sized dog is a safe dose, and afterwards quarter-grains of opium without the calomel.

The benefit of massage in such cases is not so generally known as it should be: and we take the opportunity of reminding dog owners that kneading, squeezing and rubbing—in a word, massage—may be employed with great success with small animals.

The effect of Elliman's in drawing out inflammation is well known to masters of hounds.

The dog is to be placed on his back and the Elliman's gently rubbed into the whole of the abdomen.

CONSTIPATION.

Watch-dogs and others, so unfortunate as to get but little exercise, are troubled with constipation. It sometimes arises from too much phosphatic matter in the food.

Large bones only should be given to dogs; they afford amusement, but game, poultry, and chop bones are broken up and swallowed, the soft parts digested, the mineral portion forming a sort of plug in the back bowel (rectum).

Treatment.—Purges are not suitable. The disease only recurs the sooner. If sufficient exercise cannot be given, then it is the duty of those who own watch-dogs or indoor pets to see that they have laxative food, such as cooked greens cut up fine, with meat or other food, or else some coarse oatmeal porridge, with greasy matter, or biscuits containing beetroot, or a little raw ox liver once a week.

The medical part of the treatment may necessitate the use of a purge, but it is to prevention that we endeavour to direct our readers' attention. No dog should be kept on the chain all day long; and if exercise cannot be given, a substitute may be found in the shape of laxative food. An enema of soap and water is an effectual remedy, and often gives immediate relief in cases of plugging as above referred to. Massage with the Elliman's should be employed.

BRAIN DISEASES (see also FITS, p. 117).

Except for that most terrible of all affections of the brain, rabies (see p. 101), the dog is not very liable to brain troubles after puppyhood.

Treatment.—Aperients, laxative food, afterwards tonics, and repeated applications of the Elliman's at the back of the poll.

In severe cases a seton (see p. 99, line 22) may be put in and be daily dressed with Elliman's, until a discharge is set up and relief obtained, but we advise that a veterinary surgeon should be called in.

INFLAMMATION OF THE BRAIN.

Causes.—External injuries or as a sequel of distemper.

Blows and falls on the head account for most of the former, but no small number of them arise from the use of dangerous caustics in the treatment of canker of the ear. These agents penetrate the inner ear and spread inflammation to the membranes covering the brain.

Treatment.—Pour into the ears a warm mixture of belladonna and glycerine, apply the Elliman's to the back of the poll, and give aperients.

BRONCHITIS.

Causes.—Cold and exposure; over-feeding and old age.

That produced from the first two named causes is of the acute kind and more amenable to treatment than the chronic, which is the result of degenerative changes in the heart and lungs.

Treatment.—Rub in the Elliman's from the throat to the breast, and again behind the elbows as far as the ribs, extend the rubbing in a backward direction and repeat next day.

For internal medicine, give a mixture of chlorodyne, lemon juice, and glycerine, in the proportion of one to three drops of the first and ten of the second in a drachm of the last. This may be given twice or three times a day.

Prevention.—Sporting dogs should not be put up into a dog-cart while wet, but made to follow a little way, the pace being suited to tired animals. They soon get dry on the road, and may be better for some wisping as well. It is not getting *wet*, it is the manner of getting *dry*, that does the mischief.

The chronic subject must have less food, and in small bulk, never being allowed to fill himself to repletion.

BRONCHOCELE OR GOITRE.

A disfigurement in the neck caused by enlargement of the glands.

Treatment.—Sponge daily, over the surface of the glands, with a little Elliman's. Chronic ones, in addition to the external treatment, are absorbed by a course of iodide of potassium, which should not be employed without the advice of a veterinary surgeon.

BURNS AND SCALDS.

Treatment.—To the injured parts freely apply a mixture of lime water and linseed oil.

CANCER.

Malignant growths of this kind are not frequent in dogs, and before passing a death sentence the owner should have a professional opinion.

The tumours along the belly of bitches are usually simple, and in the formative stage are capable of being dispersed by the use of the Elliman's, but they rarely attract attention in time.

CATARACT.

Dogs are subject to many injuries and diseases of the eye.

Among the chief causes are the effects of distemper and the pursuit of sport in thick hedgerows.

Cataract may arise from any injury or from old age.

A course of iodides in some cases has proved beneficial, but a veterinary surgeon should be consulted.

CATARRH OR COLD (COUGH, p. 110).

Just in proportion as dogs are pampered and kept from the effects of exposure to the weather, do they become unable to bear weather changes. Hence we find the lady's lap-dog the frequent subject of catarrh, and the poor watch-dog, kennelled out-doors, the least often affected (see CARE OF DOGS, p. 131).

The causes then may be said to be sudden and great changes of temperature, getting wet, etc. (see BRONCHITIS, p. 105).

Treatment.—A warm, dry bed. Nourishing food. A good rubbing with Elliman's under the throat and along the chest walls until the animal is in a glow of warmth.

If the matter from the nose dries about the nostrils it may be sponged off, and the parts anointed with a little vaseline.

Not much in the way of medicine is desirable in common cold. The thing to do is to keep the dog under suitable hygienic conditions and he will get well, unless the disease has been mistaken, and distemper is invading his system (see DISTEMPER, p. 115).

If the eyes are much affected, a lotion of boracic acid will be helpful, or a weak, tepid solution of tea.

CHOKING.

There is seldom time to obtain professional help when this accident occurs, therefore every dog owner should learn what to do.

Open the mouth widely, and see if the obstruction is within reach of a pair of forceps or sugar tongs.

If out of reach and not to be seen, it should be given a direction downwards. The gullet of the dog will bear a good deal of distension, and compression from outside will often afford just the additional force required to get the obstruction down.

If manipulation fails a probang must be improvised.

A piece of cane or a pliable stick, with a sponge firmly tied to the end will answer very well. This is to be pushed down the throat by one effort and without hesitation.

Nothing more is necessary but a rub of Elliman's on the outside, against the parts recently put on the stretch.

Give soft food only for a day or two, and for a greedy dog let it be cut up small.

CHOREA, OR ST. VITUS' DANCE.

The disease known by this name is one of the most dreaded by kennel-men.

The cause is obscure. All that is known is that it follows on distemper, is an interrupted current of nerve force, and the victim cannot keep still, but twitches, or even bobs up and down, in bad cases.

Treatment.—Strychnine, in the form of Easton's Syrup, in tea-spoonful doses twice daily after food, and stimulation on the outside.

Rub in Elliman's from the back of the poll to the end of the spine; it should be applied daily, unless the skin is so sensitive as to become sore, and in that case it may either be used less often or diluted with water to half strength. We recommend the latter.

CLAWS.

Inflammation of and scabbiness around the claws and feet is not confined to the sporting dog, all breeds are liable.

Causes.—These are not always to be ascertained. One, and that a frequent one, is the presence of parasites of a similar nature to mange. In dogs confined indoors and upon carpeted floors, this disease would seem to be the result of disuse, and a dressing or two of the Elliman's has been found to renew the secretion of nail and render the skin healthy. The parasitic form can be cured by using mange dressing (see MANGE, p. 120).

CLAWS OVERGROWN.

These sometimes result from idleness, but not always. Some defect of conformation may prevent the nail from getting its share of wear, and from this the wild animals are not free. All the carnivora are liable to deformed and in-grown nail.

Treatment.—Shorten the nails little by little at different times, or the quick will be cut, prove very painful, and bleed a good deal.

Dew claws in this condition should be removed.

COLIC.

Puppies are more disposed to colic than adult dogs, and may be heard to cry out in evident pain.

Cause.—Indigestion appears to be the almost invariable one. The presence of a foreign body, or worms, may produce similar pain, but does not pass off again so quickly.

Treatment.—Massage with the Elliman's is the remedy, and very soon has the desired effect.

A stimulant may be given, such as a little ginger and peppermint, or hot spirits, but the movements produced by massage and stimulation from the Elliman's suffices in almost

every instance to diffuse the nerve force, which, concentrated in one portion of the bowel, constitutes spasmodic colic.

Colic from impaction and flatulence requires other treatment (see CONSTIPATION, p. 104).

COUGH.

There are so many causes of cough that one remedy cannot be named that is suitable for all, except for outward application, and that remedy is Elliman's Embrocation.

Cough is a symptom of disease rather than a distinct disease. The irritation which makes an animal cough may be far from the place (larynx) where the tickling sensation is felt, but a counter-irritation over this region generally gives relief. Mustard and other remedies, good in themselves, have the great objection that they cannot be repeated if strong enough to have any real value. Elliman's, while active in drawing out inflammation, does not leave the skin in a condition to take on erysipelas.

A good internal medicine for coughs is that given at p. 106, or syrup of squills, in ten to fifteen drop doses, in water (see BRONCHITIS, p. 105)

CRAMP.

This term is applied to several diseases of dogs, and in some districts means colic, and in others rheumatism.

Cramp, as we mean it, is contraction of muscles and temporary loss of power over the voluntary movements.

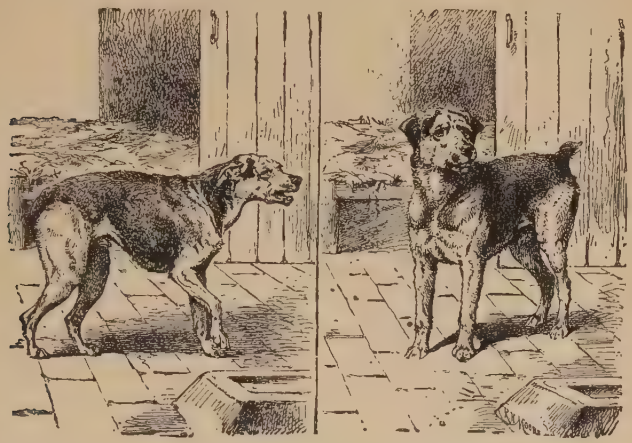
Causes.—Cold and exposure are the most common. Water dogs are the most frequent victims.

Treatment.—Elliman's is an absolute cure for it. Nothing but a brisk rubbing with it is necessary.

RHEUMATISM.

Dogs, more than any other domesticated animals, suffer from this painful disease. When affecting the muscles of the chest

and fore arm, it is well known as "kennel lameness," or "chest founder." At another time it resembles lumbago in the human subject, while a limb or the whole body may be so affected as to render the dog unable to move.



Causes.—Cold, wet, exposure to draughts; and dietetic errors in the case of lap-dogs.

Treatment.—Where there is a high temperature, the dog should have salicylate of soda given him, in doses of from ten to fifteen grains. Such dose may be given every four hours, after which we may depend on the Elliman's to complete the cure. It should be gently rubbed into the parts affected. The dog should be given a warm comfortable kennel indoors, and should be put on a fresh fish and milk diet.

CUTS AND WOUNDS.

A variety of accidents happen to dogs. There are clean cut or incised wounds; or dogs may be lacerated, contused, punctured, torn, etc., etc.

Treatment.—This, of course, depends largely upon the nature of the injury. There are a few simple rules to be borne in mind by those who cannot employ a veterinary surgeon.

Keep clean. Bring the edges together. Prevent the dog from tearing off appliances.

The simple wound that is brought together with stitches will probably heal without trouble: but in the event of a red, thin, and therefore unhealthy discharge, a little Elliman's diluted, 1 in 10 of water, may be introduced into the wound, which will help to promote healthy action.

Lacerated wounds may be caused by the bites of other animals, or by dogs getting hung up in wire fences and machinery, and in various other ways. Such wounds should be cleansed of all impurities with a simple disinfectant, or, for this purpose, some Elliman's, mixed in the proportion of a wine-glass to a quart of water. The lips of the wound are to be brought together as near as possible, and no torn skin or lacerated muscle should be cut away.

Never excise any skin until quite sure that it is injurious to the progress of the wound. This cannot be ascertained at the time of the accident.

A light dressing of Elliman's diluted, 1 in 10 of water, may be necessary if the wound seems to make no progress. Healthy granulation is what is wanted in wounds of this class, and the Elliman's will bring it about.

Contused wounds are such as result from a heavy blow that at the same time ruptures the tissues. The actual breach may not be large, but the crushing effect is prejudicial to recovery.

In the majority of cases it is well to use the Elliman's freely all round the neighbourhood of the orifice, to disperse the congealed blood and induce circulation in the parts, before local death or sloughing takes place. In some instances this is inevitable from the first.

The Elliman's will still be a suitable remedy, because it brings power to the surrounding sound tissues to cast off the slough.

Disease germs cannot, by its use, get to a wound to poison it.

Although the Elliman's contains no poison, it is not desirable that dogs should lick it, as the tongue may get sore with too frequent attention, such as dogs will bestow on a wound (see METHODS OF RESTRAINT, p. 128).

Punctured wounds (see BITES, p. 101) are not specially

dangerous to dogs. If suspected to contain injurious matter, a pledget of tow, dipped in Elliman's, should be pushed into them.

Torn wounds are about the only ones that leave serious blemishes on dogs. They may take the shape of a tongue, and shrivel back instead of uniting with the opposite edge.

DEAFNESS.

Causes.—Some are born deaf, others become so from canker and other diseases of the external ear.

White dogs are more liable to deafness than others. The reason is not known.

Treatment.—The only measures occasionally rewarded with success are the dressing of the inner ear with warm almond oil for several nights; then syringe out with warm water, dry inside, and finish off with a rub of Elliman's at the base of the ear.

EAR, CANKER OF.

All dogs are liable to this offensive and painful malady, but water dogs and poodles more so, perhaps, than other breeds.

Causes.—It is distinctly hereditary in its tendency to develop in some families. Going into the water and following in the dust of a carriage will produce it; also accumulations of wax and dirt, insects, etc.

Treatment.—Soften the contents of the ear with warm oil for two or three nights in succession.

Clean out the débris with cotton wool on the end of a bone penholder. Make a lotion of sulphate of zinc, boracic acid, and glycerine. The proportions may be as follows:—Of the first 1 drachm, the second $\frac{1}{2}$ a drachm, the third $\frac{1}{2}$ an ounce, to which water should be added to the amount of four fluid ounces.

Warm the lotion and pour in every night.

Divert the inflammation by applying the Elliman's to the base of the ear, but do not pour any inside. It should not be used oftener than once a week.

EAR, SWELLED FLAPS OF.

The flap of the ear should be gently rubbed with Elliman's diluted (half water), and the ear bandaged to the head. Repeat daily. The bandage is required to prevent the dog scratching the ear, or injuring it by shaking the head. Should the swelling be very large, it may require to be opened.

DIARRHŒA.

Causes.—Improper foods, chills; sometimes it is a symptom of distemper.

Treatment.—A dose of castor oil, followed by a mixture of bismuth and chalk, containing five grains of the former to twenty of the latter, or chlorodyne in ten to thirty drop doses in twice the amount of water, three times daily.

Prevention.—Avoidance of stale food, such as the contents of the "stock pot," and of the flesh of animals that have died.

DIPHTHERIA.

A condition resembling the fatal malady known under the above name is liable to attack dogs in foul and unhealthy surroundings, but it is not actually diphtheria.

Treatment.—Apply on a sponge tied to a stick (see CHOKING, pp. 107-8) a gargle composed of ten grains of chlorate of potash to four ounces of water several times a day.

Rub the Elliman's on the outside of the throat daily.

Prevention.—Isolate the infected animal and thoroughly disinfect the place. A good dry bed and plenty of fresh air are essential.

DISLOCATIONS.

Cause.—The hip and shoulder joints are occasionally put out of place by sudden twists and turns.

Treatment.—Reduction should be entrusted to a veterinary surgeon.

DISTEMPER.

Cause.—The cause of distemper is a moot point. It appears to be infectious sometimes and not at others. No doubt it will be found to be due to some specific organism. There is not much hope of a successful remedy being found until a cultivated virus can be obtained with which to produce a modified form which will give protection.

The early symptoms often lead one to suppose that the dog is suffering from a severe cold. There will be discharge from the nose, a collection of mucus in the eyes, a husky cough will follow, becoming more continuous, and he will appear to be endeavouring to get rid of something in the throat. If the dog has not had distemper there can be little doubt as to his suffering from it. A dose of castor oil and syrup of buckthorn appears to do good, and as a remedy has stood the test of time.

It may be that the infective matter is taken into the stomach; and, if this is so, the clearing out of the contents of the alimentary canal is rational treatment.

Distemper, when developed, attacks the respiratory apparatus at one time and the alimentary canal at another, while a third, and even worse, form is that in which the spinal cord is affected.

Treatment.—Palliation of the symptoms is about all that can be secured; good nursing, nutritious food, and plenty of fresh air are necessary. Avoid overcrowding.

The chest symptoms may be alleviated by gently rubbing in Elliman's, and enveloping the chest in dry flannel; repeat daily.

The spinal form has, in many cases, derived great benefit from daily applications of the Elliman's all along its course.

Vaccination with calf vaccine is believed to be useful. Some veterinary surgeons look upon distemper as canine smallpox, and vaccinate as a preventive.

DROPSY.

The form of dropsy from which dogs suffer is abdominal generally.

Causes.—Obstruction of the portal circulation—that is, of the liver. Worms, tumours, and degeneration of the liver substance as the result of long-continued over feeding. Lead and other poisons have been known to induce it.

Treatment.—In the case of young dogs, remedial measures offer a fair chance of success, but in old dogs a cure is seldom effected.

Two to five grains of calomel may be given at intervals of a week, and followed up by a decoction of broom, which can be obtained of any chemist.

As an external application, Elliman's acts as a stimulant. The right side over the last three or four ribs should be rubbed daily. The influence on the nerves of the skin is carried to those of the liver, and excellent results in many instances are recorded.

ECZEMA.

Under the names of surfeit, red mange, and blotch, this skin trouble is referred to by dog owners.

Cause.—Disordered blood is the cause, and injudicious feeding brings it about.

Treatment.—First give an aperient dose, and follow it up with salines. A soda and rhubarb mixture, or a drachm of Epsom salts dissolved in six ounces of water; a sixth part should be given daily.

External remedies can only be palliative, and the simpler the better. One part of glycerine to eight of water will do as well as any remedy.

Prevention.—Avoid over-stimulating foods, and completely change the diet. In this connection it may be remarked that whatever the food has been it should be changed. Raw meat will sometimes cure it when the dog has had a diet too exclusively farinaceous, but the reverse is most of the change needed.

EYE, DISEASES OF,

Dogs are very subject to diseases of the eye.

Causes.—External violence, distemper, and other constitutional disturbance.

Treatment.—Upon the particular cause depend the remedies to be selected. There is no panacea for diseases of the eye. No one lotion or ointment is a specific. A veterinary surgeon should be consulted in any but trifling injuries to this most important organ.

For simple inflammation of the conjunctiva or outer covering of the globe, foment with warm boracic lotion, 10 grains to 1 oz. of water, apply two or three times a day if necessary. If there is much discharge, add two grains of sulphate of zinc to the boracic lotion.

FISTULA.

Causes.—Habitual constipation and chronic indigestion.

The seat of fistula in dogs is in or near the anus. It is very painful, and calls for the skill of the veterinary surgeon.

The pipe, or sinus, has to be slit open and prevented from re-forming by some caustic agent or mechanical impediment, as a seton.

Prevention consists in dieting a dog subject to constipation, and giving suitable aperients when necessary. It is very cruel to neglect this.

FITS.

None of the domestic animals are so liable to fits as the dog.

Causes.—Inbreeding, teething, constipation, distemper, worms, and other diseases affecting the nervous system.

Treatment.—Keep the bowels open. Let the exercise be regular, but not excessive. Apply Elliman's to the back of the poll, and in cases of long standing, dress a seton with it and pass it through the skin.

Doses of from five to fifteen grains of bromide of potassium are beneficial in some cases, but the main thing is to attend to the bowels and apply the Elliman's at the back of the neck as above.

HUSK.

This most troublesome disease is to be caught at any time at the dogs' home or any infirmary where many dogs are kept, and is a reason why they should be treated at home.

Cause.—Infection.

Treatment.—Compound ipecacuanha powder. in doses of from five to ten grains, twice a day.

Attention to the general health, and a few doses of worm medicine are also helpful. In pure country air the victims of this disease sometimes recover when all remedies have failed in London.

INDIGESTION.

A very large proportion of pet dogs suffer from the mistaken kindness of their friends. Too much food, too often offered them, the wrong kind, irregular meals, and sugar. Worms are also a frequent cause.

Treatment.—An aperient dose and change of diet.

Prevention.—This can almost always be accomplished, except where servants and children insist on feeding a pet animal, and it is important to make them understand the bad consequences which follow from such indulgence.

When caused by worms, the enemy must be expelled (see WORMS, p. 127).

JAUNDICE.

Cause.—Some obstruction of the liver.

Treatment.—One to three grains of calomel for two mornings.

Rub the sides of the chest and of the belly with Elliman's, and give exercise if the dog is able to walk. Fresh air and a milk diet.

KENNEL LAMENESS OR CHEST FOUNDER.

The disease recognised by this name is rheumatism of the muscles attaching the fore-legs to the chest.

For treatment (see RHEUMATISM, p. 110).

KIDNEY DISEASES.

These are not very frequent in dogs, and when they do occur they are generally the result of violence over the loins or improper medicines.

Treatment for inflammatory attacks consists of good nursing, a milk and farinaceous diet, and the sponging of the Elliman's over the regions of the loins.

LAMENESS.

There are many causes for lameness in dogs, and every effort should be made to ascertain what structures are involved.

Treatment.—All ordinary cases of lameness yield to Elliman's, and when they do not a veterinary surgeon will be needed (see RHEUMATISM, p. 110).

LARYNX.

Inflammation of this most sensitive part of the throat arises from several causes (see BRONCHITIS and CATARRH, pp. 105–107). In other cases it is brought on by incessant barking and straining on the collar. Elliman's is the remedy; nothing better can be suggested.

LUNGS (Pneumonia).

Inflammation of the lungs is best treated by rubbing the Elliman's into the sides of the chest and giving the mixture prescribed for coughs (see BRONCHITIS, p. 105). A veterinary surgeon should be called in.

PLEURISY.

This is inflammation of the lining membrane of the chest, and frequently exists together with disease of the lung substance.

Treatment.—The same as for inflammation of the lungs (see p. 119, par. 5). A veterinary surgeon should be called in.

MANGE.

Cause.—The mange mite or acarus. It is easily conveyed from one dog to another, and from mats and furniture.

Treatment.—Sulphur is a specific for true mange, but the disease is often confounded with eczema (see ECZEMA, p. 116). Apply an ointment containing one part of sulphur to four parts of lard, and repeat every two or three days. A little flowers of sulphur in the food is also desirable.

FOLLICULAR MANGE.

This is the kind that does not spread rapidly all over a dog, but is of slow development, and is usually confined to the back, extending from the poll to the root of the tail.

Cause.—A parasite known as *demodex folliculorum*. Its habits are such that it is not easily got at and destroyed.

Treatment.—Wash the parts with soft soap and hot water, and apply creosote, one part; liquor of potass, one part; olive oil, twelve parts. Repeat twice weekly.

MOUTH CANKER.

Causes.—Indigestion through injudicious feeding. Old age, broken and furred teeth.

Treatment.—The canine dentist is required in such cases. He can extract all the offending members, and scale the others. The mouth being rid of these, a few stomachic doses (as soda and rhubarb) are all that is required beyond judicious dieting.

PARALYSIS.

Dogs are not infrequent subjects of paralysis.

Causes.—Distemper, blows and injuries to the back, clots in the blood vessels. Constipation from eating bones (see CONSTIPATION, p. 104).

Treatment.—Open the bowels by clysters and other aperients, and stimulate the spine with Elliman's. Give tea-spoonful doses of Easton's Syrup once a day.

Dogs have a disposition to recover from paralysis, and the owner should not despair until he has tried remedies for at least a year. Complete recovery has taken place after longer periods than that.

PARASITES.

The external parasites are prolific, and cause much trouble in some seasons. Two varieties have been already referred to (see MANGE, p. 120).

LICE.

These are larger than their relations found on man, moreover they cannot live on him. There are two varieties distinguished by helminthologists, but for our purposes we need not consider them apart.

Treatment.—Lice are very tenacious of life, and a good washing is not enough. The immature ones will not be drowned, although the adults may be disposed of, and, for this reason, whatever dressing is decided on, it should be applied twice or three times to ensure the death of the nits. A mixture of lime and sulphur is effectual. White precipitate is sometimes used, but is dangerous, and not more effectual than simpler remedies. Sulphur ointment will ensure the death of all lice, but is unpleasant in its application to house dogs. Frequent combing and brushing with a stiff brush assists in removing lice.

FLEAS.

Dog fleas are not the same as those afflicting mankind. Their destruction is simple enough, but they breed again so quickly in the autumn months, that it is well to sprinkle them with insect powder, which can be obtained of any chemist.

If a bath is imperative, as it often is, in the case of long haired animals, then the best way to prepare it is to infuse a quarter of a pound of quassia chips in the water before commencing to wash the dog with a plentiful lather of soft soap: or give the dog a warm bath containing a table-spoonful of creolin, in which case no soap should be used and the dog should dry itself. Another remedy is two ounces sulphurated potash in two gallons of water. Mix the potash in a little water to dissolve, and then add it to two gallons of water.

The bed on which the dog has slept should be thoroughly washed. Clean, soft deal shavings make a good bed, and the fleas will not live in them. Dust the bed with Keating's Insect Powder occasionally.

The shavings should be replaced with fresh ones every week.

RINGWORM.

A vegetable parasite causes this disease of the skin.

Treatment.—Mercurial ointments will destroy the parasite, but the difficulty is to get at it, or the parts affected may be treated with an application of tincture of iodine. The dog should be isolated and the kennel disinfected.

TICKS.

In the neighbourhood of sheep and deer-parks, dogs often suffer terribly from ticks.

Treatment.—Look carefully for them and pick off with fingers or fine forceps. Mange lotion has been said to kill them, but the writer has kept them in turpentine and anthelmintics without apparent injury to their health.

Harvest bugs sometimes attack thin-skinned dogs, and the remedy is the sulphur lotion or ointment recommended for mange (see MANGE, p. 120).

PILES.

Pet dogs, getting insufficient exercise and no relaxing food (see CONSTIPATION, p. 104), are liable to piles.

Treatment.—Compound gall ointment applied to the parts daily. In very severe cases, surgical treatment may be necessary.

Prevention.—Dogs need not suffer in this way. They should be properly fed and exercised, so as not to strain and enlarge the blood vessels, and in the case of an unusually constipated subject, he should have a little milk of sulphur in his daily food.

RICKETS.

A deficiency of mineral in the bones.

Causes.—Defective nutrition, unsuitable or insufficient food, or breeding from diseased or feeble old parents.

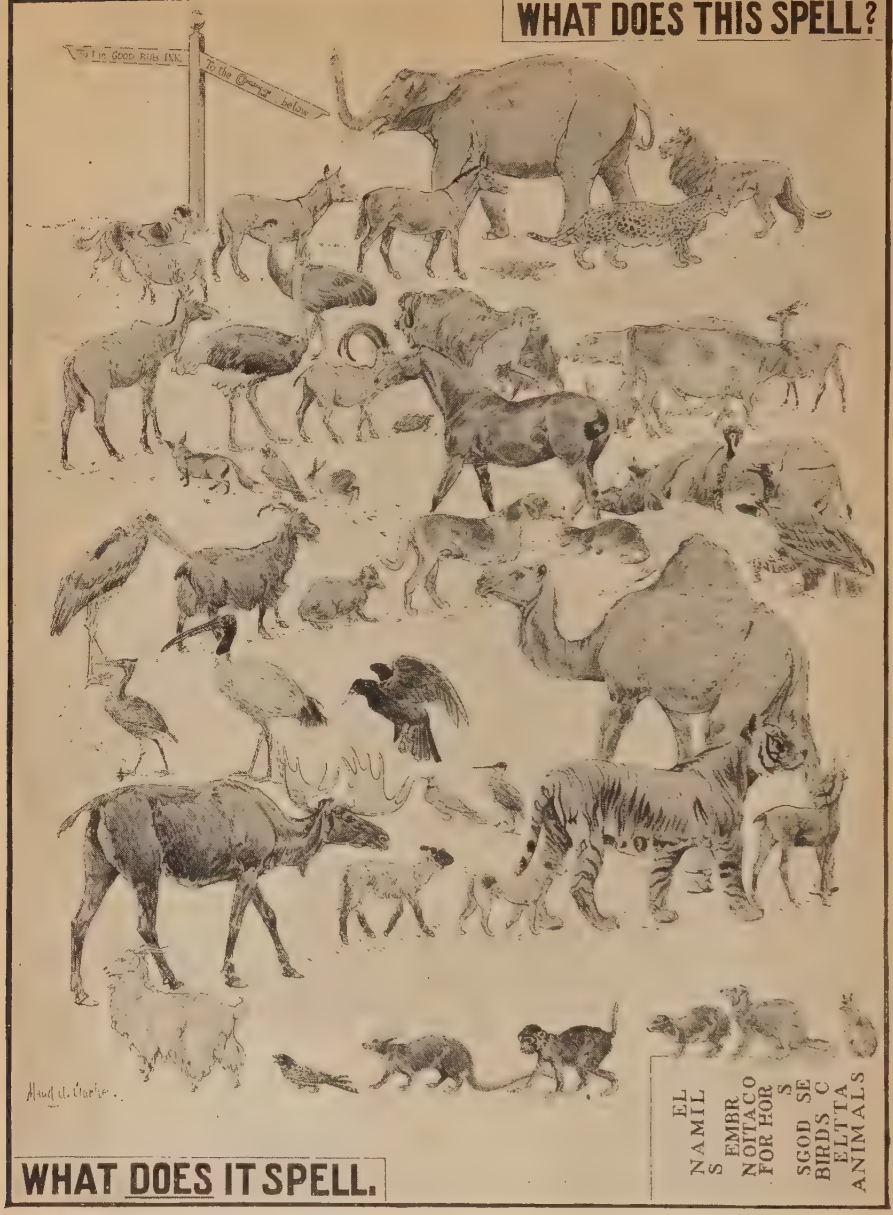
Treatment.—Nourishing and easily-digested food, compound syrup of the phosphates, lime water with the drinking water or food, daily rubbing of the weak joints and limbs generally, with Elliman's. Where the bones are incapable of supporting the weight splints and bandages are necessary.

SPRAINS.

Having regard to the marvellous activity of the dog, the sudden twists and turns that he makes, and the great courage he displays in attacking enemies, it is remarkable that he does not more often suffer from sprains. The sporting dog and the terrier or house dog do not always escape the accidents so common to horse and man, and bad sprains occur calling for treatment from all humane owners.

The loins of racing dogs, as the whippets and those of the greyhound and others used for coursing, are not infrequently put to such severe strain that injuries to the muscles and tendinous attachments follow. The thigh muscles and those of the shoulder and breast are most often the seat of sprain.

Our friend the dog does not give us the same trouble in diagnosing his lameness as some less sensitive and less sensible animals; he looks for sympathy, and often holds out the injured



NAMES OF ANIMALS IN PICTURE.

ELEPHANT, LION, NEWFOUNDLAND, ASS, MULE, ICHNEUMAN, LEOPARD, SHEEP,

EMU, MUSK-OX, BEAR, ROEBUCK, NYLGHAU, OSTRICH, IBEX, TORTOISE, APE, CAT, OX, FOX, OWL, RABBIT, HORSE, OTTER, RHINOCEROS, SNAKE,

STORK, GOAT, OPOSSUM, DOG, SWAN, EAGLE, BITTERN, IBIS, RAVEN, DOVE, SNIPE, CAMEL, ELK, LAMB, TERRIER, TIGER, ANTELOPE, ANGORA, NIGHT-JAR. ICTIDES, MONKEY. AGOUTI, LEMUR, SQUIRREL.

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member, or cries when the part is touched. When lifted by his forelegs, a sprain anywhere in front will be soon detected by his behaviour.

If any doubt exists, the owner need only feel over the suspected parts, and the exact seat of the trouble will be made manifest by the dog.

Treatment.—Bathe with warm water, and rub in the Elliman's, repeating the operation at least once a day. Dogs are particularly susceptible to the remedy, and it never fails if judiciously employed.

If there is a rheumatic tendency in the animal, it should have no meat for a few days, but a diet should be given consisting chiefly of fresh fish, milk and farinaceous foods. Cooked greens, chopped up with a little gravy, will succeed in many cases where the dog would otherwise refuse to eat any food that is not "meaty" or to his taste.

THORNS.

Sporting dogs in particular are liable to get thorns in the feet and legs. Even the lady's pet, taking his constitutional, may get one when hedge-trimming is the order of the day. Pins, needles, bearded oats, and grass seeds insinuate themselves between the toes, and have been known to work up the leg and come out at all sorts of places.

Treatment.—Find the foreign body before the part has time to fester. The hair being clipped round the suspected spot will facilitate the search. A pair of fine forceps or tweezers may serve for seizing the offending body and withdrawing it.

Foment with warm water, and dab the wound with Elliman's (see CUTS AND WOUNDS, p. 111).

UDDER TUMOURS.

Causes.—Taking away the pups all at once, or any neglect that leaves curdled milk in the glands, blows, chills, etc.

Treatment.—In the early stage, nothing more is needed than a few rubbings with Elliman's; but where there is consolidation of the tumour, there is no remedy but the knife, and this should, of course, be left to the veterinary surgeon.

Prevention.—Remove pups, one or two at a time, and see that a bitch is milked out with the finger and thumb if she gives milk out of season, as some virgin bitches will do.

WORMS.

Internal parasites play a very important part in the lives of the majority of dogs. On the highest authority we are assured that something like 70% of dogs have tapeworm in England, and this proportion is exceeded on the Continent.

The principal worms which we need notice are of two kinds, the round and the flat. The ascarides and other round worms are most frequent in puppyhood.

The flat or tapeworm class are to be found in adults, principally.

The life-history of ascarides is not clearly made out. Pups a few days old have been known to have them in a well-developed state.

Tapeworms pass an intermediate life in some other animal. There are a number of distinct species, but it will suffice to say that one dog cannot give tapeworm direct to another, and all the known varieties have an intermediate bearer.

Causes.—Eating uncooked food, and water or matter containing ova.

The viscera of hares and rabbits contain an intermediate form of tapeworm. In the dog the imperfect parasite is hatched and fixes itself to the intestine, developing into a worm of many segments in a short time. Each of these segments is capable of producing 30,000 eggs. Another tapeworm passes its intermediate life in the body of the dog louse, so that the bearer, in biting himself, swallows the cyst, which contains the head of a new worm, and this again fastens on to the dog's bowel, and develops as described above.

Treatment.—For round worms santonine is the chief remedy. Ground glass, buchu leaves infused in hot water, and a variety of drugs unnecessary to name.

For tapeworm, areca-nut still holds its place as the best anthelmintic. It should be bought in the form of nuts, and grated with a nutmeg-grater to ensure its freshness, and be mixed with milk.

Dogs should be prepared by at least twelve hours' fasting; twenty hours would be better. The medicine should be given in the morning and the effect carefully noted.

Dose.—For round worms, santonine ½ to 5 grains (maximum dose) in a tea-spoonful of milk.

For tape worms, freshly ground areca-nut, about 2 grains for every pound of the dog's weight, to be given in the form of a pill, or suspended in milk.

A dose of castor oil afterwards is good treatment.

METHODS OF RESTRAINT.

The majority of persons who keep dogs seldom or never give a dose of medicine to them, and it is often difficult to do so.

When medicine can be conveyed in food or drink, it is, of course, the easiest plan of administering it.

The dog should not see the *prepared* food, neither should the first morsel contain it. The suspicious pet should taste the appetising morsel and find it all right, and take the medicament in a subsequent one. Dogs soon learn to count, and the programme should be varied each time.

Giving fluid medicines is the most difficult; and, having decided on the drug to be given, the pharmaceutical chemist should be consulted as to its most concentrated form. The tabloid has taken the place of the nauseous tincture, infusion, and decoction in human practice, and the amateur does well to avail himself of these aids.

If a liquid is the only agent in which the medicament can be conveyed, the dog should be held up and his cheek pursed out to make a funnel for the fluid to run into. The teeth should not be forced open. The nose may be slightly pinched, but it is only a question of firmness and a little time before the dog swallows it.

Powders are the most convenient form in which to administer medicines. Place the left hand over the patient's face, press the finger and thumb on the lips, and squeeze them against the teeth. The dog opens his mouth when he feels this gentle pressure. The powder should be placed upon the back of the tongue.

Pills are difficult only to the timid person who does not push his finger far enough up the animal's mouth, so as to get the bolus beyond recall. There is no danger of being bitten, if the upper lips are held over the edges of the top teeth.

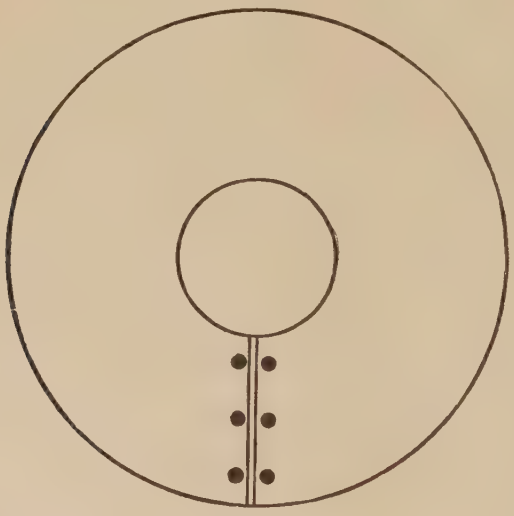
Giving a clyster or enema. If the patient is not alarmed by rough and clumsy hands, he will submit to this operation readily.

The tail should be firmly grasped with the left hand, the instrument (previously oiled) introduced slowly, not forcing the sphincter muscles, but tiring them until they yield. The india-rubber ball syringe (Higginson's) is the best for the purpose, as it leaves one hand free.

Not alone for the purposes of giving medicine do we require to exercise methods of restraint. In any sort of operation where chloroform is not employed, we need a safe muzzle. A regulation one is quite useless for the purpose. A stout length of tape answers best, folded across the dog's face and again under his jaw, it can then be brought behind his neck and tied at the back.

Puzzles.—When a broken leg has been set, or any contrivance placed upon a dog, he will generally try to bite it off.

The "cradle" familiar to horsemen answers but indifferently with dogs; and, for any but the very largest and strongest, a good puzzle can be made out of millboard or oilcloth.



Dog Puzzle.

The inner circle must equal that of the dog's neck, and the illustration shows how it is put on and afterwards secured in its place.

Poisonous lotions, etc., may have to be used, and this contrivance has been found safe and effectual.

WASHING.

When it is necessary to wash dogs to rid them of vermin, care should be exercised in not making the water too hot.

The face and head should be wetted first, as fleas and other parasites seek refuge about the ears and eyes, some escaping if the usual practice is adopted of beginning in the middle of the back.

CHLOROFORM.

As a method of restraint, total anæsthesia is of course the most complete. It cannot be too much impressed upon amateurs, however, that only a qualified man should be allowed to administer an anæsthetic.

CARE OF DOGS.

Feeding.—To keep dogs in health, regular feeding is desirable, and a fresh supply of clean water daily.

Being by nature carnivorous, the dog prefers animal food, and will eat very little else if he can get enough of that. It has been found that dogs in a state of domestication become more frequently diseased when the diet is composed too largely of meat. When the system of feeding on raw offal was discovered to be wrong, the public was for a time misled by enthusiasts into the opposite error, and gave their pets and sporting dogs alike nothing but biscuits. Ships' biscuits, full of weevils, were thought good enough for dogs, until biscuit-makers catered specially for our canine friends. These can now be had from a number of respectable firms, with or without a reasonable proportion of meat fibre in them.

Mr. Hugh Dalziel says: "Hard and fast rules in feeding are dangerous—age, individual constitution, existing state of health and condition have all to be carefully considered."

Over-feeding, as will be seen in the pages of this work, is a frequent source of disease, and under-feeding brings in its train bad consequences. As a broad rule, it may be laid down that indoor pets and other dogs not taking much exercise should have very little meat. All dogs should have their principal meal in the middle of the day, watch-dogs not excepted. If breakfast is given, it should be very light, just a little sop or a biscuit. If no breakfast is to be the rule, then a similar light supper may be allowed; but a dog, to be kept well, should not have more than two meals a day, one of which should be only a bait, while the other should be a thoroughly substantial one. Where only one dog is kept, house scraps answer every purpose, provided they are not stale and that the "stock pot" is not given to the dog when it becomes too bad for use.

Oatmeal, rice, and other meals, well cooked, make dogs fat and thriving; but hunting dogs require some flesh food in addition.

"Milk for babes" and milk for pups. Puppies should be round and plump if they are to do well, and nothing to achieve this is equal to milk and farinaceous foods. They do not, as a rule, take distemper so badly when brought up on an exclusively milk diet. There is one important thing to be borne in mind, however, and that is the tendency in dogs to round worms. It has not been proved that their eggs are carried in milk, but experience proves that when milk is boiled pups are not nearly so liable to these pests. Little feeding, and often, is the rule to apply to very young animals, increasing the intervals as they grow older and take more substantial food.

BEDDING.

The indoor pet will see to it himself that he has the softest chair and the best place in any room, but the kennelled dog

should have a good dry bed, lifted above the ground, if only by four bricks. Pine shavings are preferable to any other stuff to lie upon, as they are objectionable to fleas and other parasites (see EXTERNAL PARASITES, p. 121). Straw, hay, ferns, and dried leaves may be also used; but moss litter gets into the coat, the water, the food, and everything else, besides which it harbours ringworm.

KENNEL.

The kennel in winter has, above all things, to be kept dry, but in warm weather the opportunity should be taken to clean out with disinfecting fluid, so that no corners for fleas are left undisturbed. The sunny side of the premises in the winter is the place for the dog, and the shady one in summer. This is too often forgotten, and tied-up dogs suffer discomfort and disease as a consequence.

GROOMING.

Dogs of every breed are benefited by good grooming. It brings the blood to the surface and promotes the healthy action of the skin. A wisp of straw or a dandy brush may be used, or the "hound glove," which is a convenient contrivance for the purpose. Mats of dead hair in the long-coated varieties are very unsightly, and may be picked out by pulling asunder, not dragging outwards, as the latter process is painful and not so effectual.

EXERCISE.

It is now generally known that no dog can be truly healthy without exercise. Not only is this forgotten, but sometimes the house dog is not turned out night and morning to empty his bladder. He suffers pain if well trained, and becomes a great nuisance if not. If he knows when to expect his run, he will learn to behave in a becoming manner. Good mothers teach their pups, and the latter should not be taken away too soon, except for necessary reasons, such as exhaustion of the dam.

KENNEL DRESSING.

For hounds and for other dogs. For cleansing and promoting a healthy action of the skin, and for the destruction of vermin :—

KENNEL DRESSING OF HOUNDS & OTHER DOGS.— READ BELOW

Sweet Oil - - - - - - -	1 pint.
Elliman's Embrocation - - -	4 ounces.
Sufficient Flowers of Sulphur	

to be gradually stirred in until the mixture becomes of the consistency of thick cream.

The dressing to be rubbed in with a soft brush; it may be repeated on the second or third day.

PURGATIVE MIXTURE FOR DOGS.

Castor Oil - - - - - - - - - -	3 parts.
Syrup of Buckthorn - - - - - - - -	2 parts.
Syrup of Poppies - - - - - - - -	1 part.

Dose.—One to two table-spoonfuls, according to the size of the dog.

HERE YOU HAVE IT.

REJOICING.

PART III.

BIRDS.

DISEASES OF BIRDS.

Nearly all the diseases of poultry and cage-birds are the result either of confinement, uncleanliness, damp quarters, or of mismanagement.

ABNORMAL GROWTHS.

The Dorking breed of fowls, and some cage-birds, are prone to growths, as a result of chronic inflammation, of a low order. Acute lameness is not at first a symptom, or a cure would be easily effected by the use of Elliman's, which has the property of dispersing or causing the absorption of "matter in the wrong place." Owners do not recognise the early signs as a rule.

BUMBLE FOOT.

An enlargement of the foot and eventually anchylosis of the joint. This is seen, even in wild birds, in severe winters, the lark, the thrush, and some of the finches falling victims to it.

All breeds of fowls are liable to it, but more especially the Dorking, as the number of toes is attended with uncertainty, and it may be presumed that in many cases it is congenital deformity.

Treatment.—Bold measures are the best. The bird will certainly get worse if left alone, and failure to cure it leaves us in no worse position. Catch up the afflicted one and, having bathed the foot in warm water, endeavour by continued forceful movements to bring back the ordinary flexion and extension of the joint. Rub in Elliman's briskly with a piece of flannel, and repeat next day and until cured or abandoned as hopeless.

APOPLEXY.

Rupture of a blood vessel in the brain, or inside the skull.

Causes.—Over-feeding, close confinement, the use of spices and other artificial stimulants given to produce eggs in abnormal quantity.

Treatment.—There is no opportunity of treating those already affected, as they fall from the perch and die immediately, without showing any previous illness.

Prevention.—Review the whole management of the stock, especially with regard to food.

Give a dose of castor oil, about a tea-spoonful to each bird; let there be a day of fasting, and have a thorough cleaning out of the houses and runs.

Discontinue prepared spices and advertised foods, and use only the simplest food, as a little sop in the morning and whole oats at night; give them no maize or buckwheat at all for some time.

The morning meal should be a very light one and the fowls will then get more exercise in search of the food most desirable, *i.e.*, insects, worms, etc. If confined in a close run, the medical treatment must be relied on and feeding as directed.

BALDNESS.

Poultrymen always mean loss of feathers about the head by this term (see DISEASES OF THE COMB, p. 142).

BLACK ROT.

This term is applied to a congested condition of the comb, which goes on to actual death or "rot," as poultrymen call it.

Causes.—Over-development of the comb in certain breeds, as those of the Spanish type; close confinement, and absence of natural food, as grubs, insects, vegetable matter, etc., etc.

Treatment.—Place a red-hot bar of iron in the drinking water as often as it requires replenishing. If the first symptoms are observed, a little dilute Elliman's (one part to ten of water) may be rubbed into the base of the comb, and vaseline applied to the edges. Liberty is the cure as well as prevention.

BROKEN LIMBS.

Domestic fowls, as well as cage-birds, are subject to broken limbs, the result as a rule of their getting hung up in fences or wire cages, and, in the case of farmyard fowls, through their being trodden upon by animals or injured by undisciplined dogs.

The commonest seat of fracture is below the hock, by which we mean the great joint between the foot and the thigh. Many a good bird is sacrificed under the impression that nothing curative can be done.

Treatment.—Secure the bird at once and prevent further injury through fright and struggling. This particularly applies to small cage-birds, whose limbs will unite as well as those of fowls, if properly attended to.

Let an assistant hold the wings behind the birds and grasp the thigh well above the seat of fracture. Do not use wooden splints; there are many things to hand that are better.

Small birds' legs can be set with such light materials as folds of tissue paper enclosed by a covering of starch, paste, glue, or even gum. The chief thing is to get the broken ends in apposition and to hold the sufferer until the support is dry or properly set. Lightness is essential with small birds. A layer of cotton wool, with a slight strip of plaster, is sometimes employed.

The legs of fowls may be set in gutta percha, which should be moulded to the limb while hot, and become sufficiently stiff when cold to give the necessary support. Cardboard or brown paper, softened in hot water, can be used in the same way, and a thin, light bandage placed over all, with glue, gum, or starch.

Broken Thigh.—Fracture in this position does not offer the same facility for mechanical supports, but what has been said of fracture lower down applies to all others, namely, getting the ends in apposition and keeping them there.

Broken Wing.—The setting of a broken wing is a comparatively simple matter. All that is necessary is to tie the ends of some of the wing feathers, place the injured member in a natural position, and stick the ends of the feathers to those on the flank by means of pitch or glue. The patient should be confined in a small space. When the wing can be released, the enlargement which will be readily seen, may be stimulated by a little Elliman's (one part to five of water). This will clear up the callus, and restore the member to usefulness much sooner.

CANKER.

By canker is meant a sore which leaves an ulcer indisposed to heal up, but rather to spread, and eventually to kill the subject of it.

These sores come up as pustules about the head, neck, and inside the mouth.

Causes.—Damp, dark, dirty, and unwholesome surroundings, and the presence of decaying vegetable and animal matter.

Treatment.—Cleanse with warm water and a disinfectant, and touch the ragged ulcers with Elliman's undiluted. Repeat daily. Change the diet, give all the insectivorous food obtainable.

Prevention.—Healthy surroundings, plenty of fresh air, and a run sufficiently large. To the keeper of half-a-dozen fowls in a London back yard the latter advice is no use; all he can do is to change his stock as often as possible, and use plenty of disinfectants, leaving his yard without any fowls during the time of year when eggs are cheapest.

CATARRH OR COMMON COLD.

Running from the eyes and nose and a generally bleary appearance denote this disease, and a draughty or foul atmosphere gives it special virulence in the town man's back yard flock.

Any sort of exposure, especially wet floors and uncleaned houses, are among the other causes.

Treatment.—Good nursing. A dry loft, free from draught, soft nutritious food, as oatmeal mixed with milk, powdered biscuits made into a soft paste, milk puddings, etc., etc.

Where sore throat is a marked symptom, as exhibited by craning the neck forward, an application of the Elliman's to the throat will be useful in drawing out inflammation and enabling the bird to swallow with greater ease.

CHOLERA.

Chicken cholera, as it is commonly called, is not at all frequent in this country, and as there is no remedy when it has once attacked birds, we may confine our remarks to its prevention.

Inoculation by a modified virus is said to confer immunity. Cleanliness and disinfection are the true preventives, as it is due to a specific bacillus which cannot live in the presence of a true disinfectant.

COMB, DISEASES OF.

The colour and condition of the comb are indicators of the bird's health. Everyone recognises the increasingly bright comb as revealing the fact that a pullet will soon lay, but the general health is also to be judged by this appendage. Any sort of injury is reflected in the comb immediately, it is the first part in which the circulation is seen to fail. A dark red or purplish tint in cock or hen should call the owner's attention to something being wrong.

White Comb.—A scaly eruption, which quickly spreads over the adjoining parts, involving the whole head in time.

Cause.—Insanitary surroundings.

Treatment.—Dress the comb twice, at intervals of a week, with the Elliman's. Remove the birds into a fresh and healthy place and give grubs, insects, worms and fresh vegetable food.

CONSTIPATION.

A rare condition in fowls, but occasionally met with in cage-birds that are exclusively fed on dry seed.

Causes.—These are purely dietetic, and a more laxative regime is needful.

Treatment.—A dose of castor oil or chopped greens and olive oil for cage-birds, and sardine oil in the case of fowls. Cage-birds should have a little sulphur mixed with bread sop for a few days, this simple treatment being usually successful. Oatmeal gruel, cooked with salad oil, will generally have the desired effect.

CONSUMPTION, OR TUBERCULOSIS.

This dread disease carries off more poultry than all the other ailments of birds put together. Man, animals and birds are all liable to it.

Cause.—A specific organism which gains access to the body, principally by the alimentary canal.

Treatment.—None. It is quite incurable.

Prevention.—Here is our hope. We can prevent it, if the necessary precautions be taken. Assuming that the infection is taken with the food, it will be apparent that, wherever an infected fowl's droppings are left, there will be the bacillus ready to be taken into the crop of another bird.

What is the general practice of feeding? Does not the poultry-woman feed close to home? Does she not call the flock on to the ground most saturated with the droppings? In this way one or two infected birds spread the disease. The elaborate precautions recommended by experts may not in every case be practicable, but it is within the power of every one to adopt the common-sense measure of feeding as far from the home as possible. In flocks known to be affected, the writer has seen the most marked reduction in the mortality from this precaution alone, while owners possessed of many acres have got rid of the disease by having portable houses and destroying all the old fittings about the homestead, keeping no fowls at all there for one whole winter. Better let the sparrows have the pickings about the barton than retain tuberculosis on the premises.

CRAMP.

Cause.—Chickens, by which we include the young of fowls, turkeys, ducks, guinea-fowls and game birds, are subject to cramp, which causes the loss of a goodly number every year, as they are left to perish by their mothers when unable to follow, or when, having strayed from the coop, they cannot return. Wet or frosted grass is the most frequent cause of cramp, and it follows that very early and very late-hatched birds are the victims.

Treatment.—Fortunately we have in Elliman's a perfectly satisfactory remedy. The victim of cramp should be taken indoors and gently rubbed with the Elliman's over the limbs

and feet, when he will soon respond to its effects, and often be well again in a short time.

Prevention.—Do not let chickens out until the dew is off the grass, or the sun high enough to keep up their temperature.

RHEUMATISM.

In damp situations, and especially among elderly show birds, this disease makes itself felt severely at times.

Treatment.—Remove the birds to a dry place, and rub in Elliman's to the swollen and painful joints.

CROP-BOUND.

Causes.—Over-feeding on hard and indigestible food with insufficient grit; the swallowing of a feather or stiff chaff, foreign bodies, etc.

Treatment.—In order to quickly neutralise the decomposition which follows on inability to dispose of the contents of the crop, it is well to drench the bird with a solution of hyposulphite of soda in the proportion of half-an-ounce to half-a-pint of warm water. Next proceed to massage with a small amount of Elliman's on the fingers. The stimulus derived from the Elliman's will often, assisted by the manipulation of the crop, enable the contents to be moved on, and no further treatment but "short commons" be needed.

Failing to move on the impediment, an operation is sometimes performed. The crop is cut open and the contents mechanically removed, the inside is washed out with a disinfectant and the parts brought together again with stitches. If the edges are indisposed to unite, a light touch with Elliman's is calculated to bring about healthy granulation.

CROP, DROPSY OF.

Another form of enlarged and incapacitated condition of the crop is due to dropsy, "slack" or "soft crop," as it is named.

Cause.—About this there is some difference of opinion, but as to the actual condition there can be no doubt. There is a weakness which causes inability to contract upon the food and to perform the usual function.

Treatment.—Internal remedies have effect in building up the debilitated constitution, and the best are of the carminative order, as cayenne pepper, alum, and sulphate of iron. Ten grains of the first two, and three grains of the latter, should be made into twelve pills, one being given four times daily. The dose may be increased to two pills if necessary.

Externally, we have in Elliman's an admirable remedy, as it imparts tone and vigour direct to the affected parts.

CUTS.

Wounds in birds heal easily enough if they will only let them alone; the worst consequences are merely emphysema, or elastic distension of the body from air accumulated in cavities, indicating a good deal in human surgery, but of no account in bird doctoring. The surgical wounds made in caponing give no trouble except for this admission of air, and the remedy is simple enough, consisting as it does of pricking the bladder and allowing the air to escape. If by chance a wound becomes poisoned, all that is necessary is to dress it with Elliman's, when it will take on healthy action.

DEBILITY.

Cage-birds and domestic fowls occasionally suffer from weakness, or wasting, without any apparent or assignable cause. There is one, doubtless, but we cannot always find it out during the lifetime of the bird, and post-mortem results are only useful as serving to prevent further losses from the same cause.

Pallor of the comb, or the membranes of the mouth, or white of the eye, indicate an insufficient quantity of red blood. This may be, to a large extent, supplied by giving iron in some form

or other, but the cause should be sought: it is of no use feeding with tonics if worms are devouring the digested food before it can enter the animal's blood. Want of light, or fresh air, in the case of town-kept birds, is frequently the reason of the debility, and the treatment is obvious.

DIARRHŒA AND DYSENTERY.

There is a scientific distinction between these conditions, but it need not concern us here: for all practical purposes, dysentery is diarrhœa long continued.

Causes.—Chiefly dietetic errors, as feeding too much on potatoes, cooked foods, sour stuff from the kitchen, or excess of green food after long confinement. Worms also set up an irritable condition which nature seeks to relieve by profuse evacuations.

Treatment.—Clear the bowels with a dose of castor oil (no matter the purging), then give pills of opium, chalk, and cayenne pepper. Another good combination is to be found in bismuth, powdered catechu, and alum or tannic acid. The latter appears to suit turkeys and pheasant-chicks better than any other.

The food should be astringent, as rice, boiled eggs mixed with bread and milk, or puddings.

DIPHTHERIA (so called).

A disease of fowls in which a false membrane forms in the throat. As a pinch of salt often appears to cure this, it cannot be true diphtheria, although microscopic examination would lead us to suppose so.

ECZEMA.

An eruption which is often the cause of birds pulling out their feathers. It is not very common among fowls, but parrots are frequently disfigured by its effects.

Cause.—Indigestion arising from unsuitable food. Eating meat or picking bones nearly always constitutes the reason of eczema with parrots.

Treatment.—A few grains of bicarbonate of potash in the drinking water, and the application of flour to the skin.

EGG-BOUND.

Cause.—Food of too fattening a nature and insufficient exercise. Fowls kept in confinement, and cage-birds, are the most frequent subjects.

Treatment.—Hot vapour bath to the parts. A wide-mouthed bottle or earthenware jar, with some scalded bran in it, will answer the purpose if the hen is held over it to feel the effects of the vapour. Canaries and other small birds can be held over an egg-cup thus filled. A very spare diet and a dose of olive oil are also recommended.

EGG PASSAGE, INFLAMMATION OF.

Through the breaking of an egg in its passage, serious inflammation sometimes occurs. In small birds very little beyond the steam bath above mentioned can be advised, but with fowls it is possible to use a syringe, and so by careful manipulation we may remove the broken shell and thus pass the soft parts.

EYES, INFLAMMATION OF.

When not associated with roup or other infectious diseases, inflamed eyes are generally the result of fights and injuries received in other ways.

Treatment.—Bathe with warm milk or a very weak lotion of sulphate of zinc (two grains to the ounce of water).

FLEAS.

Fleas are a great detriment to poultry and other birds, making them restless and dissatisfied, and generally hindering progress.

Treatment.—Catch up each bird and, holding it upside down, dust in between the feathers a quantity of Persian powder, which can be purchased in bulk of any chemist. For fowls confined in a close run, a dust bath may be made with a pound or two of flower of sulphur mixed with *slacked lime.*

Prevention.—Cleanliness. When fowls have been purchased from a suspected source, it is a good plan to give them a bath of quassia; to prepare it, boil ¼ lb. of quassia chips in three or four quarts of water for a quarter of an hour.

GAPES.

This disease, so destructive to chicks of poultry and to game birds, is caused by a parasite (*sclerostoma syngamus*) which specially affects low-lying land. If a dead chick is opened, its wind-pipe will be found to contain a bundle of these worms, which during life caused it to gasp or "gape."

Treatment.—Remove to new and high ground, feed generously, and give tonics, as saccharated carbonate of iron, in the food.

In advanced cases the only effectual remedy is to catch up the birds, draw out the tongue, and, dipping a large darning needle into the Elliman's, then touch them with the point. This kills many, and the cough that follows will cause more to be ejected. The writer on one occasion saved a very large number of young pheasants by this means.

Prevention.—Put the coops on fresh grounds every year and dress the soil in autumn with salt.

GOUT.

Cause.—Over-feeding and insufficient exercise. Heavy breeds are the most frequent subjects.

Treatment.—To give immediate relief, use Elliman's; but for permanent cure, let there be exercise and less stimulating food.

INDIGESTION.

Causes.—Heavy meals in the morning, as maize, which should be reserved for long winter nights, when birds are on the perch fourteen hours or more. Damaged forage, which some persons seem to think is specially desirable for fowls, when a sale of it can be effected in no other way. Another most fruitful source of indigestion, and that which afflicts the back-yard fowl, is the want of sufficient grit, without which digestion cannot be performed. Suitable grit is not everywhere obtainable, but it may be made by baking oyster-shells, which can be easily crushed and so supply all the necessary material for digestion, and for the formation of egg shells.

LEG WEAKNESS.

Cause.—Too much forcing. The attempt to bring birds of six months to the weight of those nearly twice their age can only be done in a few cases. The weight of the body is too great for the under-standings.

Treatment.—Strengthen the limbs by applying the Elliman's, and supply the system with the bone-forming elements in the shape of syrup of phosphates.

Prevention.—Give lime water and powdered shells with the food from the first month or six weeks.

LICE.

Provide a sand bath, into which some Keating's Insect Powder has been dusted, or an antiseptic powder.

Birds that can be handled should also have the powder dusted under the feathers.

Prevention.—Attention should be given to the cleanliness of the poultry houses, which should be frequently limewashed. A change of run is desirable.

Hens' nests should be changed from time to time and kept dry.

LIVER DISEASES.

Except for the invasion of tubercle (see TUBERCULOSIS, p. 142) the liver is rarely diseased in birds treated on rational principles. The symptoms are offensive evacuations and mopiness.

Treatment.—Short commons, no drugs; plenty of exercise.

LUSH, OON, OR SOFT EGG.

Cause.—In nearly every case, this is caused by the absence of sufficient calcareous matter, which can be supplied by baked oyster shells, broken up. Cage-birds are so well catered for by dealers, that the most suitable materials can be bought for a penny, and it is pure neglect that causes them to lay shelless eggs, except in a few cases of debility where the power of assimilation is lost.

PARALYSIS.

Leg weakness, referred to at p. 149, is not the same thing. It is a derangement of the nervous system or a pressure on the spinal cord.

ROUP.

This disease has been called glanders, from its malignancy in some seasons. Coming on with the appearance of a common cold, it soon develops into a nasal gleet, and the whole of the respiratory membranes of the head are involved. The nostrils become glued together and the eyes closed.

Treatment.—Change of food, a dose or two of castor oil, and rubbing the legs with the Elliman's.

PIP.

A horny tumour on the tip of the tongue.

Cause.—Stoppage of the nostrils and breathing through the mouth.

Treatment.—Scrape it off and dress with powdered alum. See to the general health, as pip is but a symptom and not a disease in itself.

POISONING.

Many valuable fowls are lost by carelessness in throwing out poisoned baits that have been used or intended for rats and mice. Vermin-killers of the dry kind sold in packets, contain either strychnine or arsenic, and, like phosphor paste, take effect so quickly that nothing can be done, as a rule, to save the victim.

Prevention.—Burn all poisons not kept in proper receptacles and labelled.

Treatment.—Good nursing. Separate the sick from the flock and give tonic medicines, as iron and quinine, made into pills and pushed down the throat.

WORMS.

Domestic fowls, as well as cage and wild birds, serve as hosts to a large number of parasites. We have not space to enumerate them, but as to the important business of getting rid of them, we may remark that there are two chief classes, the round and the flat, and that the former can be generally expelled by santonine, and the latter by areca-nut, and oil of male fern.

The majority of birds will eat a sop containing the two first-named drugs, but the latter must be given in pill form.

Where a flock wastes and no apparent cause can be found, a careful post-mortem examination should be made, as the presence of parasites may be the solution.

PART IV.

CATTLE.

ABSCESS.

CATTLE are subject to two forms of abscess, the one containing a straw-coloured fluid called serum, and the other manifesting the nature of a boil, the matter in which is thick (pus).

Cause.—Blows and other forms of violence, thorns, gores, etc.

Treatment.—Foment with warm water and rub in Elliman's Embrocation every day. If this is done when the swelling first appears, dispersal of the contents may be expected.

When matter is formed, the proper treatment is to induce "pointing" by fomentation, and by continued use of the Elliman's until a soft place can be felt. At this point a lancet should be boldly plunged in and the contents squeezed out. Dip a little tow in the Elliman's and push it into the wound. This will work a change in a short time, leaving a perfectly healthy wound, free from infective matter. Nothing more need be done unless in very hot weather, when the parts should be smeared with tar to keep off flies. Some abscesses refuse to point, when it is necessary to introduce a seton dressed with Elliman's. The needle should be inserted at the highest point and brought out at the lowest to ensure drainage.

ABORTION.

The serious losses incurred by this disease every year have received the most careful attention from the government, and experiments performed in this country and on the continent leave little doubt that it is infectious and due to a specific microbe.

Prevention.—Cows in calf should not be allowed to drink out of stagnant or polluted ponds. Isolate the cow or cows that abort. Thoroughly disinfect the stable and dress the "shape" of the remainder of the herd with a solution of permanganate of potash daily. The place in which a cow has aborted should be disinfected and kept vacant for a month, and the cow not re-bred from under six months.

ANGLE BERRIES.

These unsightly growths should be removed before they cause annoyance and loss of condition. They come in all sorts of places, and according to their situation should be the treatment adopted. The cause is not known.

Those growing around the eyes and upon the teats need carefully ligaturing with strong thread or plaited silk made for the purpose. The large ones, which are often dependent from the belly and between the legs, may be twisted off. There is no hæmorrhage, and healthy action will follow on real danger, by a dressing with Elliman's.

Strong caustics are unnecessary and dangerous. Cows in calf should not be interfered with.

ACTINOMYCOSIS.

The popular term of "wooden tongue" is applied to other enlargements, and we are compelled to adopt the long appellation above, to indicate a very serious disease of cattle.

Cause.—This is now definitely known to be due to a vegetable fungus taken with the food.

Treatment.—Iodide of potassium in half-ounce doses daily is an excellent remedy, effecting a complete cure in most cases. Where the swollen tongue is attended with much inflammation, a

good rubbing of Elliman's under the jaw affords relief to the urgent symptoms while the iodide is allowed to take effect.

AMAUROSIS, OR GLASS EYE.

Cause.—Pressure on the deep-seated origin of the optic nerves. Blows and falls may account for this condition, and it may not be permanent, though it is generally so.

Treatment.—Brisk purgatives, and Elliman's applied to the back of the head for a month, at intervals of a few days.

ANTHRAX.

Cause.—The Anthrax bacillus.

Treatment.—None may be attempted, as the law requires notice to be given to the police.

Prevention.—Burning of all carcases, and thorough disinfection of buildings, and destruction of bedding.

ANTHRAX, SYMPTOMATIC.

The above is the scientific name given to what is known in different parts of the country as

QUARTER ILL, BLACK LEG, POOK, BLOD STRUCK, etc., etc.

It differs from anthrax in the fact that the specific bacillus has not been found after death, but is equally fatal.

Prevention.—A very general belief is entertained in the efficacy of setons, despite the ridicule cast upon the practice of using them by scientists who have nothing better to offer in their place (see SETONS, p. 184).

APHTHA.

Thrush in the mouth or aphtha is a mild form of inflammation in the lining membrane of the mouth, bringing up a crop of little bladders, which break and leave the mouth sore.

Cause.—Irritating food, as hay with many thistles in it.

Treatment.—Give a dose of Epsom salts, and wash out the mouth twice a day with a solution of alum and boracic acid.

APOPLEXY

Is a condition in which there is pressure of blood on the brain, or actual rupture of a vessel. A similar condition of the lungs is called pulmonary apoplexy, and the comatose state of cows that drop after calving, is known as parturient apoplexy (see MILK FEVER, p. 181).

Treatment.—Bleed from the jugular vein and apply ice to the poll. An aperient should be given and a low diet prescribed.

ASTHMA.

Cause.—Inflammation of the muscular coat of the bronchial tubes, resulting in structural changes.

Treatment.—There is no cure, only palliative remedies can be given. These consist of tar balls, with which may be mixed some nitre and digitalis in small doses. Inhalation of steam often proves beneficial; a tea-spoonful of liquid tar may be added in the boiling water.

ATROPHY.

Wasting of muscles has been traced to a variety of causes, as blocking of blood vessels, parasites, etc.

Treatment.—Worm medicines (see WORMS, p. 185) and the daily application of Elliman's with friction to the parts affected.

BED SORES.

Causes.—Continued illness, when the animal is not able to get up, and struggles on the ground (see MILK FEVER, p. 181). Bad bedding and uneven floors.

Treatment.—Wash the sores clean and apply a mixture of flour and burnt alum in the proportion of five of the former to one of the latter. Avoid sawdust, shavings, or moss-litter while the sores continue.

BALDNESS.

Causes.—Parasites, which excite itching and provoke rubbing; debility of the skin.

Treatment.—If due to the latter, Elliman's will cure it, by promoting the circulation of blood in the skin. Generous feeding and tonics may also be given.

BLADDER, DISEASES OF.

These call for the skill of the veterinary surgeon. They are in some cases caused by getting a chill over the loins, and, if so, Elliman's will effect a cure in a few applications.

BLAIN.

An eruption of the skin which often affects the mouth inside and outside; in some cases a large vesicular swelling forms in the upper part of the base of the tongue, which it may be necessary to lance.

Cause.—This is not very clear, but it is said to be provoked by removal to rich pasture. Many cases coming under the author's notice appear to have been acquired on the road by eating coarse roadside grasses covered with summer dust.

Treatment.—A mouth wash of alum in water and an aperient saline dose.

BLOODY URINE.

Blood in the urine must not be confounded with red water (see RED WATER, p. 183).

Cause.—It may be due to stone in the kidney, in the canal, or other part of the urinary apparatus, or from a violent blow over the loins.

Treatment.—Cooling diet, small doses of linseed oil, and the external application of Elliman's to the loins.

BLOODY FLUX.

Causes.—Continued or neglected diarrhœa, irritating and innutritious food, as outsides of hay ricks, etc.

Treatment.—(See DIARRHŒA, p. 169.)

BONES, FRACTURE OF.

Broken bones should always receive the attention of the veterinary surgeon, unless it is decided to kill the beast at once and before there is any rise of temperature to render the flesh unfit for food.

Where professional aid cannot be obtained, an attempt may be made to set a broken limb, if the fracture is a simple one.

The broken ends are to be brought into apposition and packed with a soft covering that will not afterwards chafe the skin. Tow answers this purpose as well as anything, but any soft old clothing will do. Upon the top of this some firm material must be used. Strips of wood, leather, tin, or other stiff stuff is then bandaged over and kept on by glue, starch, or tarred cord. The limb should be bandaged from the foot upwards, no portion being free from gentle pressure, or troublesome swelling will take place below the injury.

Slings do not answer for cattle as they do for horses, and as a rule the former soon learn to get up and down without hurting themselves.

When a bone is broken, there is bleeding from the parts and nature forms a clot or provisional union. Changes take place which convert it into soft gristly material and, lastly, into bone; but there is always more bony matter produced than is actually required for union, and the projecting ossific matter getting in the way of the tendons is the reason of so much lameness being left after a firm reunion has been made. It is here that Elliman's comes in. Its action is such that the superfluous material is absorbed, and the weakened muscles which have wasted by disuse are restored to their proper functions.

BRAIN, DISEASES OF.

These are obscure and call for professional skill, but it is always a safe plan to give an aperient while waiting for advice (see STAGGERS, p. 184).

BRONCHITIS.

Causes.—Hardships and exposure, or the coddling of cattle and subsequent sudden changes from the heated stable to the chill winds of spring. The presence of small parasites *(filaria bronchialis)*.

Treatment.—A vigorous application of the Elliman's from the top of the throat to the brisket and behind the elbows. For internal medicine, give drachm doses of emetic-tartar night and morning, and plenty of linseed mashes. The sick box should not be too warm; pure air is of importance. This is a dangerous and insidious disease, and we advise that a veterinary surgeon be at once consulted.

BRONCHO-PNEUMONIA.

When the lung substance, as well as the bronchial tubes, is affected the above name is given to the disease.

Treatment is practically the same, only that the Elliman's should cover more of the chest walls, extending their whole length.

CALCULI, STONES.

Cattle are liable to the formation of stones in various organs, but it is not easy to diagnose their presence in life, save in those cases which occur in the prepuce of the bull and in the udder of the cow.

Causes.—A diet containing too much saline material, and hereditary predisposition.

Treatment.—The kind referred to in the bull accumulates about the tuft of hair; they are small, but easily aggregate, and irritation follows, unless the hair is cut off and the gritty matter picked away with the finger nails, and the parts anointed with some simple ointment. Those obstructing the teats cannot be removed from the body without an operation which would result in a lost quarter, but they may be pushed back with a flexible probe or a milk-syphon, when they will often fall into a position where they will remain without causing inconvenience.

CANCER.

The term is often misapplied to tumours of a benign or non-dangerous character. A veterinary surgeon should be consulted as to the nature of the growth, as it may not be necessary to destroy the animal, whilst, on the other hand, keeping it may be a source of loss, and bring a dairy into disrepute.

CARBUNCLES.

A malignant boil in which a large amount of tissue is destroyed.

Treatment.—Only a very bold amateur will attempt the elimination of a carbuncle, as it often needs cutting out with all the corruption or dead flesh upon it which constitutes the bulk of its substance.

Elliman's is the best of all dressings, both before and after operation, as it brings health and vigour to the adjacent parts and helps nature to cast off the slough.

CATARRH, OR COMMON COLD.

Causes.—Sudden changes of temperature and impure air, as that in auction byres and aboard ship.

Treatment.—Good nursing is of importance, as common colds have a knack of becoming malignant if neglected. Plenty of linseed gruel and Elliman's applied to the throat, holding the animal's head over a pail of boiling water, to which a table spoonful of turpentine has been added, gives relief.

CATARRH, MALIGNANT.

Causes.—Neglected cold, infection. Authorities are not agreed as to the latter.

Treatment.—Stimulants and tonics, steaming the head, and liberal diet, drenching with gruel and beer, if no food is taken.

CHINE FELON.

A rheumatic affection of the loins (see RHEUMATISM, p. 166). Elliman's is the cure for it.

CHOKING.

The symptoms are easily recognised by those in attendance on cattle.

Treatment.—Drench with a little linseed oil and feel for any enlargement on the outside. Sometimes this can be seen and felt and the obstruction made to move on, with judicious manipulation in an upward direction. Failure to move it, from whatever cause, resort must be had to the probang or choke-rope. A little more oil should prepare the way, and as soon as the instrument comes in contact with the obstruction it should be pushed down without stopping, if it can be induced to move at all.

The treatment afterwards is to rub the skin with Elliman's as near to the part lately strained by the obstruction as possible. Inflammation will be thus prevented or relieved. Feed the animal with sloppy bran mashes only for a day or two.

Prevention consists in having a good root-cutter and using it: and not giving apples unless crushed or put through the cutter, like mangels and swedes.

"CLUE BOUND."

Fardal bound, fog-sickness and staggers are names which all indicate the same condition of obstruction in the digestive canal.

Causes.—Too much dry food, eating woody innutritious stuff. Stalled cattle having much cotton cake and chaff, and no exercise, are prone to it in the winter months.

Treatment—A violent purge should not be given, but the contents softened throughout by repeated doses of linseed oil or oil alternated with treacle.

COLIC.

Causes.—Indigestion, long fasting, and over-feeding, copious draughts of cold water when over-heated by travelling.

Treatment.—For simple colic, where there is no great flatulence or distension of the belly, stimulants and cordials are the remedies employed. An ounce of ground ginger in a quart of old ale is a favourite remedy with drovers, who generally get some experience in this disease, and have to wait for hours on the road. Chlorodyne in 1-oz. doses in water is useful. The belly should be rubbed all over with the Elliman's, as it causes that distribution of nerve force which, concentrated in one portion of the bowel, constitutes the true colic.

Flatulent colic requires the same treatment as Hoven or Dew-blown (see p. 168).

COMA

is a state of drowsiness or torpidity of the brain.

Causes.—Indigestion, pressure from morbid growths, parasites, etc.

Treatment.—A brisk purgative and comparative abstinence from food in nearly all cases relieves, if it does not cure. Where the cause is permanent it soon recurs, and the prudent man will get ready for the butcher rather than attempt prolonged treatment.

CONSTIPATION.

Causes.—In the majority of cases, dietetic errors. In some, an absence of bile from liver disorder.

Treatment.—There is usually some amount of urgency when it is discovered, and a dose of half-an-ounce of aloes and a pound of Epsom salts may not be too much for a full-grown bullock, but to get the bowels into proper order again the treatment should be rather directed to a change of food. Alternate doses of linseed oil and treacle will be sufficient in many cases.

Prevention.—The droppings of all stalled animals should be watched, and those of costive habit served with bran, linseed oil,

or other laxative food, and, if this is not sufficient, a pound or two of treacle two or three times a week. The latter is very fattening and worth the cost as a food.

COW POX.

A disease of a mild type accompanied by eruptions on the teats and about the udder.

Cause.—While it is well known to be infectious it would appear to arise spontaneously in some stalled animals which have had no contact with others. Specific diseases are said by the most advanced scientists never to arise *de novo*, although we may be unable to trace the source of infection.

Treatment.—The attack is often so mild that nothing is done in the way of treatment. The milk of cows so affected is not considered fit for consumption, and most of the large dealers attach a penalty to their contracts in case of any being sent.

Some falling off in the quantity of milk makes it worth while to take measures to restore the animals as soon as possible. The sores should be bathed with warm water in which a little boracic acid has been dissolved. If the sores are indisposed to heal, they may have a dressing of burnt alum after each milking, and, should the teat get blocked, the syphon should be passed and the milk drawn off to prevent garget.

Prevention.—As soon as one cow is affected, she should be removed from the herd and given a mild dose of salts. The same attendant who handled her should have nothing to do with the milking cows, nor should the same pails or other implements be used. The sheds may be washed down with some disinfectant.

CRAMP.

Cramp in cattle is generally the result of lying on hard stone or cobble floors with insufficient bedding, and the cure is in the hands of the attendant if he is allowed as much litter as is required. Damp situations engender cramp, in a form which cannot at first be distinguished from rheumatism.

The parts most affected are those in which the greatest amount of fibrous tissue exists, or else the tendinous portions of muscle.

The great muscles of the back which make the sirloin when on the table are prone to be thus affected, and beasts will sometimes remain upon the ground for days, or even weeks, "refusing" to get up as it is said, but the real fact of the matter is that it hurts them too much to make the effort when called upon to do so; they have probably already tried, unobserved and before anything was found to be the matter. The loin muscles are essential to rising from the ground, and it is cruel and useless worrying a bullock into getting up. This certainly does in a few cases of irresolution have the effect desired, but, taken as a rule, if a beast does not rise and follow the herd, it is not for want of will, but for want of power. The joints, tendons of the leg, and attachment of muscles are subjects to cramp of a lasting character; but there is also a purely muscular cramp, such as is not unknown to human beings when bathing in cold water. The latter is easily enough cured with an application of Elliman's, but the more chronic forms need a daily rubbing over the affected parts, which will usually be found hard and at the same time tender. The remedy recommended here is a certain cure if persevered with according to directions.

RHEUMATISM.

It has already been said that cramp and rheumatism very much resemble one another, but there is this difference, that—while the former can be immediately cured—the latter will require more time and a diligent use of the specific known as Elliman's.

There is often much pain with rheumatism, especially when affecting joints; the animal "blows" and perhaps refuses his food.

The affected parts swell, and are hot, and extremely tender when manipulated. There is, too, a peculiarity about rheumatic lameness, namely, that its sudden disappearance from one limb

or joint precedes its appearance in another. A hind leg may be the seat of lameness one day and the fore leg the next, or *vice-versâ*.

There is scarcely any part of a beast which can be said to have immunity from an attack of rheumatism; but the loins, hips, hocks, knees and pasterns are the most common seats of this disease.

Treatment.—Elliman's is a good remedy. There is no need to wait for the exact nature of the complaint to declare itself, whether cramp, acute rheumatism or sprain, as either may be the cause of lameness, and the Elliman's is the thing to use. It excites the effused fluid to absorption in the case of sprain, distributes the nervous energy which for a time is concentrated in a muscle in a state of cramp, and removes the rheumatic poison, neutralising that as it does the sting of a wasp or bee.

In simple cases of recent rheumatic affection, a few applications will suffice to restore the animal to soundness, but with old-standing trouble the affected parts should be first bathed with hot water to make the Elliman's more rapidly penetrate. The rubbing should be long continued and repeated. Give from two to four drachm doses of salicylate of soda in milk or water, one pint once or twice a day for some days.

DEBILITY.

A poor or wasted condition without any definite disease is called by this name.

Causes.—Starvation and bad management, sour land, and constitutional feebleness, worms, etc.

Treatment.—Nourishing food, good housing or well-drained pasture, if in summer time, tonics consisting of iron, gentian and cordial seeds, ground and mixed with linseed and bran mashes. Stimulating the spine with Elliman's is often helpful. If caused by worms, see p. 185.

DELIRIUM.

Causes.—Some disturbance of the function of the brain, as in milk fever, milk madness, foreign bodies in the stomach, etc. In calves, hair balls and curdled milk (see p. 181).

Treatment.—This will depend on the special cause, but it is a safe and good practice to bleed cattle from the jugular vein while waiting for professional assistance, and a strong purgative should be given (see p. 193). In the case of calves, castor oil should be given, from two ounces to eight ounces, according to the size of the calf.

DEW BLOWN, HOVEN, FOG SICKNESS, BLAST, ETC.

Cause.—Fermentation of the contents of the paunch or rumen.

When animals have been yarded through the winter, and are keen for a bite of green food, they will often fill themselves to repletion without stopping to chew the cud, and gases are quickly evolved which distend the belly to an enormous extent. Most practical farmers take precautions against this, but now and again stock will break out and get into clover and become blown before they are discovered.

Treatment.—A pint of linseed oil, to which add two ozs. of turpentine, or half a pound of sodium hyposulphite with three drachms of carbonate of ammonia added, in a quart of water, followed in an hour by a similar dose of either if the flank does not go down; a probang should be passed to allow the gases to regurgitate. In severe cases it is necessary to puncture the rumen. Proper instruments are made for the purpose, and a veterinary surgeon will plunge the point into the left flank and through the side of the paunch without hesitation. If assistance cannot be obtained, the amateur will bear in mind that the place to operate is midway between the hip and the last rib. The direction given to the instrument should be downwards and forwards. A knife, not less than six inches long, may be made to do duty, and a fresh cut stick of alder from which the pith has been removed. This is rough surgery, but it has saved many a valuable animal. A probang introduced into the animal's rumen may answer.

Prevention.—Turn out only for an hour or two if there is a flush of grass. Wait until the dew is off. See to your fences. See that the roots are given whole, or properly pulped.

DIARRHŒA.

Excessive fluidity of the bowels is more often a symptom than a disease.

Causes.—These are very numerous. Anything that does not agree with a beast may set up diarrhœa; it is nature's way of getting rid of offending material. In errors of diet the cause may oftenest be sought. Tuberculosis often takes this form, and wasting follows despite the best of treatment.

Treatment.—Change the food. Give flour-gruel, and for medicine a mixture of powdered catechu and chalk, 1 oz. of each.

DISLOCATIONS.

These are matters for the veterinary surgeon. When reduced, the best treatment is to apply Elliman's, as it strengthens the strained ligaments and forms a pad inside (see SPRAINS, p. 184).

DOWNFALL OF THE UDDER, GARGET, MAMMITIS.

This troublesome complaint was thought to be caused by chills and bad milking, and is now believed to be due to a specific organism.

Treatment.—There is nothing so useful as Elliman's, which should be applied with plenty of massage, imitating the movements of the calf when sucking. Its effect upon the peripheral nerves is conveyed to those which preside over the function of lactation, and the supply is put in abeyance until the congested state of the gland is relieved. After the first application it may be used at half strength daily, or night and morning, in obstinate cases. A bold aperient dose is also advised, as much as an ounce of aloes and a pound of Epsom salts being given when the symptoms first manifest themselves. The cow should be isolated, and the place disinfected.

The teat of the affected quarter should be kept open by using the syphon. Neglected cases may end in loss of a quarter

or in sloughing of it. When the gland means to come away, a line of darker colour than the rest is seen, and there the separation will take place. The healthy parts adjacent should be stimulated to cast off the dead tissue by applying the Elliman's daily, and when the slough finally comes away nothing better can be used for dressing the gaping wound, which only requires to be kept healthy to completely heal up.

DROPSY.

Cause.—Interference with the portal circulation. Extreme debility will sometimes bring it on In any case a veterinary surgeon should be consulted.

EYE, DISEASES OF.

Although the eyes of cattle are subject to as many diseases as those of other animals, the same degree of importance is not attached to them.

COMMON INFLAMMATION, OR CONJUNCTIVITIS.

Watery tears, followed by an accumulation of glutinous matter, are the principal symptoms.

Causes.—Catarrh, cold winds, draughts in the stable, the irritation of flies, blows and scratches from brambles, etc. Foreign substances, as hay-seeds and chaffs.

Treatment.—Warm fomentations and the removal of offending bodies. Where much inflammation exists, an infusion of green tea is recommended. The opacity that follows may be disposed of by a mild lotion consisting of three grains of sulphate of zinc to each ounce of rain water.

PERIODIC OPHTHALMIA.

A recurrent inflammation which results in cataract.

Cause.—Supposed to be of a rheumatic origin; or bad drainage, bad ventilation.

Treatment.—The same as before prescribed for common inflammation, but a spot about two inches from the angle of the eye should be rubbed with Elliman's, in order to counteract the structural changes that are liable to follow.

EYELIDS, TORN.

If these are not treated, the animal suffers considerable needless pain and a long time elapses before union (or loss of the part) ends the trouble.

Treatment.—Secure the patient by a rope round the horns or poll, with bull dogs in the nose. Bring the wounded lid together with separate stitches, leaving the blood to clot on the sutures (see WOUNDS, p. 186). The difficulty of restraining animals while a delicate operation is performed on the eye has hitherto deterred many from attempting it; but, with the aid of cocaine, the resistance is unimportant—no feeling remaining in the lid if dressed with a seven or eight per cent. solution of the drug. The stitches may be left in for a week. What has been said of cocaine of course applies to the removal of foreign substances.

FEET, DISEASES OF.

Foul, Loo or Low.—These terms are applied rather indiscriminately to different foot lamenesses. Whenever a bullock is lame he should be examined and the cause ascertained, instead of the mere expectation that he will "come right." Special attention should be given to the space between the digits, and foreign substances looked for. The heel should be felt all round for any sign of heat or tenderness.

An abscess is apt to form in the heel, which is extremely painful, causing loss of condition, and in a milch cow lessened flow of milk.

Causes.—The origin of the abscess called foul or loo is not very well understood, but the fact is noted that such foot-disease is most common on low-lying marshy grounds.

Treatment.—Poulticing is generally recommended, but is not always practicable, while it is at all times very troublesome. When carried out efficiently, it is not nearly so effectual as Elliman's, which in the early stage will disperse the inflammation altogether. If matter has already formed, an opening should be made to allow of its escape. Elliman's is also the best application, diluted, one in ten of water, after the enlargement has broken. It keeps out deleterious organisms and promotes healthy granulations (see WOUNDS, p. 186).

SORE FEET.

Causes.—These are brought about by two opposite causes, namely, too much exercise by taking long journeys on hard roads, and too little by remaining tied up and getting no healthy action or sound growth of the horn. The foot grows to an excessive length in tied-up cows and with bulls which have to be kept shut up, but it becomes of inferior quality and soreness results.

Treatment.—Soak the feet in a strong solution of burnt alum. Rub the coronets with Elliman's, as the latter will induce a growth of stronger horn. When the foot has grown to an excessive length, it should be fairly rasped down.

Prevention.—More time on the road when journeys have to be performed, and daily exercise for those animals which have to be kept in. A few minutes' rest in the yard, or even being out on the road, has a beneficial effect in hardening the feet and upon the secretion of joint oil, and general health.

FEET, ULCERS OF.

Besides foul or loo above mentioned, the heels of cattle are liable to ulcers of an indolent character, from which an offensive odour is evolved.

Cause.—Injuries from treading on stones and stubs in the ground or other outward violence to the soft parts.

Treatment.—Wash clean and apply Elliman's with a feather on the ragged surfaces daily. This will soon cause them to put on a healthy appearance.

FOUNDER.

When inflammation has been so neglected as to invade the sensitive laminæ, serious structural alteration takes place, and nothing can be done for it. As this term is sometimes applied to the early inflammatory stage, it may be well to mention that the Elliman's will draw out the inflammation if applied round the coronary band.

FOMENTATION.

When warm bathing is advised, it should be understood that warm and not scalding hot water is intended. Inexperienced persons are very apt to use water much too hot, and so cause needless pain and loss of cuticle. The hand of a person engaged in manual labour is hard and comparatively insensitive, and is no test as to the heat which the skin of an animal can bear. The naked elbow should be placed in the hot water, or in the poultice intended for application to a cow's heel.

FOOT AND MOUTH DISEASE.

The local policeman is the person to apply to when this disease appears.

GAD FLY (see WARBLES, p. 185).

GLOSS ANTHRAX.

Malignant sore throat, in which the tongue and membranes of the mouth participate. The swelling of the tongue makes the animal unable to keep the mouth shut, while ropes of saliva hang out, and the poor creature is truly a pitiable sight.

Cause.—The anthrax bacillus is said to be the cause, but this is not certain, as cases recover when the blisters on the tongue and inside the mouth discharge freely.

Treatment.—This should be entrusted to a veterinary surgeon.

GLOSSITIS, OR INFLAMMATION OF THE TONGUE.

The first symptoms of this disease are similar to that just described, but it is quite within the capacity of the amateur to treat it successfully.

Causes.—Prickly forage, frosted glass, splinters, and other foreign bodies.

Treatment.—Begin with an aperient. Put two ounces of nitre in each bucket of water, lance the most swollen parts of the tongue, give iron and gentian powder in gruel, and if the animal cannot swallow food, supply it in the form of enema.

A diversion of the swelling may be brought about by a vigorous application of Elliman's to the throat, and immediately under the jaw. In this way the tongue is reduced in size, and some of the most painful symptoms alleviated.

HÆMORRHAGE, OR EXCESSIVE BLEEDING.

Occasionally an animal bleeds to death by accident, but it is not a frequent experience, even among veterinary surgeons, to meet with cases of the kind. Every cattle-man should know the simplest and best means of controlling a loss of blood which threatens to become dangerous to a beast's life, or a source of weakness and loss of time in fattening.

Bleeding, to be of any serious extent, must be from the severance either of an artery or of a vein of some dimension, and the rational mode of arresting it is to secure the vessel, or plug the wound if unable to find it. If, from the nature and seat of injury, it is impossible to use mechanical appliances, then there are means which, acting through the medium of the circulation, tend to arrest excessive flow of the vital fluid. Nature herself intervenes in many instances to save the life of the animal that is bleeding to death, by causing it to faint and fall in a posture favourable to arrest of the stream and consistent with renewal of the heart's action when time has permitted a clot or natural plug to form. A familiar example of the latter

may be seen every lambing season, when, after castration, some of the lambs lie down in a fainting condition and, presently getting up again, reveal two long strings or cords hanging from the scrotum; these are plugs formed of blood, and are most effectual in saving the life of the lamb.

Animals do not all behave in the same manner; besides, wounds and other injuries causing hæmorrhage are of such kinds that, without prompt interference, death would inevitably result.

What, then, are the means at our disposal when an accident happens and professional assistance cannot be summoned in time?

There is usually cold water to be had, and this is a most powerful astringent when properly applied. Cold water should be thrown over the loins, if bleeding breaks out after the castrator has gone, dashing it against the belly and flank. Cold effusions to the head have a like effect although the injury may not be near it.

To stop the spurting blood from a severed artery, when in the field, appears a difficult matter without any appliances or warning. But there are many things which may be utilised for the purpose.

A pin run through the skin and some hair taken out of the tail of a horse or cow will serve to make a figure-of-eight compressed over the part if the cut vessel cannot be seen, and itself secured, by tying with a hair, or a bandage made of a strip off the lining of one's coat or other garment. A scarf pin, a hair pin, a meat skewer, or a thin stick cut from the hedge, may be utilised to bring together the edges of a gaping wound from which it is feared that an animal may bleed to death. If a stick has to be used, a pocket knife may be required to pierce the skin with, before introducing it. Hæmorrhage from a limb or any part which can be bandaged is easily enough controlled, as pressure will stop bleeding sufficiently until expert assistance can be obtained. Besides the lining of coats and other garments before alluded to, a stocking may be named as likely to prove a serviceable bandage.

If a house can be reached there will be found other aids, as cobwebs, vinegar, spirits, perhaps ice and other domestic remedies.

Salt or any innocuous substance which assists in the formation of a clot arrests hæmorrhage, and pressure immediately above the seat of injury, in the case of a limb. A tourniquet may be improvised out of a pocket handkerchief and a stick.

If a doctor or a chemist is near, the surgery will be found to supply still more effectual agents, in the form of tincture of iron, tannic and gallic acid. One of the most potent agents in the arrest of bleeding is the hot-iron or actual cautery as it is called. When all other means have failed, the cautery has often succeeded; but there is a natural repugnance on the part of humane people to use this remedy, as it is so suggestively painful, not perhaps actually more so than other styptic agents.

Internal remedies are also given to stop bleeding, both without and within; among them may be named common salt, which thickens the blood very rapidly, and in the hands of the expert is given subcutaneously, or injected into the veins. Such application is, of course, out of the question for use by the amateur, who may succeed with a bold dose or two in a small quantity of water. Gallic acid, tincture of iron, and sugar of lead, the two latter only in small doses, tend to arrest internal bleeding as from lungs or intestines.

Alum may be recommended to the cattle owner with great confidence as a safe and commonly effectual styptic.

HEART, DISEASES OF.

Although the centre pump responsible for the circulation of the blood has so much less to do in cattle than in horses, it is in cattle we expect to find heart troubles much more often than in horses.

Causes.—Exposure to bleak winds on draughty moors as in the famous cheese making districts, and lodgments of foreign bodies.

Treatment.—Must be left to a veterinary surgeon who, as a rule, is the person capable of ascertaining the nature of the disease by the aid of his trained ear applied to the side.

Prevention.—Less sudden changes from the cow-house to the open, and some sort of shelter from the wind. Nothing can be done to prevent those forms of heart disease which arise from a scrofulous constitution.

PALPITATION OF THE HEART

does not necessarily prove that the organ is diseased.

Causes.—Fright and indigestion are common causes, besides which there are a number of diseases in which palpitation is but a symptom.

Treatment.—An aperient dose, followed by cordial powders and other aids to digestion.

Prevention.—Consists in studying the peculiarities of the particular animal, and selecting a suitable diet while avoiding all causes of excitement.

HOOSE, OR HUSK,

principally affects young stock, but mature animals are not exempt.

Cause.—Worms in bronchial tubes (see BRONCHITIS, p. 161).

Treatment.—The animals should be given daily doses of spirit of turpentine with milk, one to four ounces, the dose to be regulated according to the age of the animal. The fumes of burning sulphur have been successfully employed in the treatment of this disease, but a veterinary surgeon should be called to superintend the treatment. The animals should be sheltered and liberally fed.

The practice of pouring drugs into the nostrils is cruel and useless; only such portions as get swallowed can do any good. It is quite an accident if any of the medicament goes down the channel intended, as the effect is that of a crumb when it goes the "wrong way."

Prevention.—Housing at night, and not turning out until the sun is well up and the dew off the ground. Salt the affected land in autumn, and destroy, by fire, all carcases dead of the disease.

JAUNDICE

is recognised by the yellowness of the skin and mucous membranes.

Cause.—All we know is that matters which should be removed by the liver are allowed to remain in the blood.

Treatment.—Give the following drench. Aloes 1 ounce, nitre 2 ounces, glauber salts ¾ lb., in a quart of warm water. After an interval of two nights the following may be given :—

Nitre	2 oz.
Bicarbonate of potash	2 oz.
Gentian	2 oz.
Glauber	¾ lb.

Mix with a quart of warm ale or gruel.

This dose should be repeated twice or three times at intervals of two or three days. The right side, from the last three ribs to a hand's breadth behind them, should be stimulated with Elliman's, the functions of the liver being often restored in this way.

JOINT FELON, OR JOINT EVIL.

A common name for tuberculosis of joints, rheumatism, or septic inflammation of joints in young stock, due to navel infection. The two latter forms only are amendable to treatment (see RHEUMATISM, p. 166).

LARYNGITIS, SORE THROAT.

Inflammation of the lining membrane of the larynx.

Cause.—Exposure to the east wind and sudden climatic changes.

Treatment.—Repeated applications of Elliman's to the outside, and good nursing. Sedatives are often prescribed, but the Elliman's will do all that is required in assisting nature to throw off the disease.

LEAD POISONING.

Lead has gained access to the bodies of cattle in a variety of ways.

The neighbourhoods of mines and pastures where mining was formerly carried on are found to cause lead poisoning, from the animals taking in oxidised lead with the grass or in the fumes of smelting works.

Treatment.—If the cause is discovered sufficiently early, remedial measures will be successful. Purgation with salines, as Epsom or glauber salts, and repeated administration of dilute sulphuric acid, have the effect of arresting the action of the lead already absorbed, while the swollen and painful joints can be cured by Elliman's.

Prevention.—Test the water-supply for lead, and reject it if found contaminated. If the pastures are known to have had poisoned animals there, change the stock frequently, and give salts and acid as above.

LICE.

The presence of lice prevents animals from thriving, and should receive immediate attention.

Cause.—Although necessarily coming by transmission from other animals, direct or indirect, and through the medium of straw or other bedding, it is well known that lice thrive best on cattle that are half starved or doing badly.

Treatment.—If the weather is warm, a wash of stavesacre, made by boiling half-a-pound of the drug in a gallon of water, will kill the parasites, but the dressing will have to be repeated, as the nits are not killed. In winter, when washing them might cause a chill, the affected beasts can be smeared with linseed oil, or olive oil and paraffin, equal parts, have the desired effect.

LIGHTNING.

We know of no remedy for lightning-struck animals, but refer to the subject here, because many farmers do not know that fire insurance covers the loss. When the beast is thought to have been struck, a veterinary surgeon should be employed to make an examination and certify to the cause; but the carcase may be kept above ground to enable the insurance company to send an expert of their own, if they choose.

LIVER DISEASES.

Besides jaundice (referred to on page 178) a congested state of the liver is met with, more particularly in the case of stalled and fatting bullocks.

Causes.—Want of exercise, close atmosphere, and over stimulation of the liver with rich food.

Treatment.—Reduced rations, enforced exercise, saline aperients in repeated small doses. Elliman's should be rubbed in over the region of the liver.

Prevention.—Animals put up to fat should not receive too generous diet at first, or until they have become accustomed to the altered conditions of life. Occasional saline aparients should be given.

LOCK-JAW, OR TETANUS.

Cause.—A specific bacillus gaining access through wounds or abrasions.

Treatment.—No medical treatment appears to be at all satisfactory, the tetanin serum not excepted. The largest numbers of recoveries reported have been apparently spontaneous. Turning the animal out to grass and leaving him alone is seemingly the best treatment.

LUMBAGO.

This is a form of rheumatism, and requires no other treatment than Elliman's (see RHEUMATISM, p. 166).

MANGE.

Cause.—A parasite similar to that causing the disease in dogs and other animals.

Treatment.—Sulphur is a specific. The best means of applying it is to mix it with some fatty matter of an inexpensive kind, the proportion being only a matter of convenience. One part to seven of cheap petroleum jelly is a good working ointment. Repeat twice.

MILK FEVER.

There are many theories as to the cause of milk fever, but the real cause is still unknown.

That it more often occurs in deep milkers, and at the third or subsequent birth, is a matter of common knowledge, and it is less frequent in the "butcher breeds" or meat makers.

Treatment.—The most successful treatment appears to be inflating the udder with oxygen, by means of an air pump through a cotton-wool filter. When the udder is fully inflated, it should be well hand-rubbed for twenty minutes, afterwards sponged over with some Elliman's. Should the cow not have recovered, the process can be repeated in six or eight hours' time.

Prevention.—It is believed by many persons that cows are less liable to it for being kept on oat-straw and hay for six weeks before calving. Occasional aperient doses should be given prior to calving.

MILK MADNESS.

Delirium or frenzy following on sudden deprivation of the calf, or chilling winds checking the secretion of milk.

Treatment.—Bleed from the jugular vein, give a dose of bromide of potassium or chloral (see MILK FEVER), and by good nursing and suitable food endeavour to bring back the milk.

Prevention.—Calves should be taken away directly they are dropped, unless it is intended that the cow shall bring them up. Avoid exposing fresh-calved animals to inclement weather.

OBSTRUCTED TEATS.

This condition and its treatment are described under DOWNFALL OF THE UDDER (p. 169).

PALSY OR PARALYSIS.

Besides the paralysis of milk fever (see MILK FEVER, p. 181) there are instances in which palsy comes on without known cause. After death it is discovered that some splinter or bone, or other substance, has been pressing on the brain. In other cases debility alone accounts for partial paralysis.

Treatment.—Nourishing food, small doses of nux-vomica in gruel. Daily stimulation of the spine with Elliman's.

PARTURIENT APOPLEXY (see MILK FEVER, p. 181).

RABIES.

Cattle bitten by rabid dogs show much the same symptoms as other animals, namely, biting the seat of the wound and an unwonted disposition to destroy fences and mangers, etc., etc.

Cause.—It is now ascertained that rabies is never spontaneous, and can only be brought about by inoculation from another animal already mad.

Treatment is out of the question, and the only thing to guard against is mistaking the mania of milk madness for hydrophobia, as the symptoms greatly resemble one another. A veterinary surgeon should, of course, be consulted, but on a station where expert advice cannot be had, time will prove if it be rabies, as animals seldom live more than a week, and never exceed eight days, when affected with rabies, while the treatment recommended for milk mania will have the opportunity to bring about a change long before the expiry of that period.

RED WATER.

Cause.—Ill-drained land and old rough pasturage infected with lice are said to be the cause of red water.

Treatment.—First a bold aperient, as an ounce of aloes and ¾ lb. of Epsom salts. The application of Elliman's over the loins. Nourishing food, gruel, old ale or wine, in moderate doses at regular intervals. Change to newly laid down pasture.

RINGWORM.

Cause.—A vegetable parasite.

Treatment.—The vitality of ringworm varies very much in different seasons, but in the ordinary way sulphur ointment will destroy it. In troublesome and persistent cases, it may be necessary to use mercurial ointment, or a preparation of spirit of tar with sulphur and oil, rubbing it in two or three times. Tincture of iodine, applied to the affected part with a brush, may be tried.

SCOUR, SKIT, WHITE SKIT.

A disease principally affecting calves.

Cause.—Indigestion. Too full a meal and too long intervals. Cold skim milk and unsuitable substitutes, or a specific organism in the milk. Septic infection through the navel at birth.

Treatment.—Clear the digestive canal of its sour contents with a dose of castor oil, give small quantities of milk, and give them often. A decoction of oak bark, made by boiling an ounce of it in a quart of water for half an hour, is as good an astringent as any; one or two table-spoonfuls to be given for a dose twice a day, or the medicine (see p. 193).

See that the calf-house is properly cleaned out and disinfected. Many of those with stages are saturated with stale discharges, and a septic form of diarrhœa results.

At calving, cows should have a clean bed.

Newly-born calves should have the navel dressed daily with an antiseptic—one part Elliman's to five parts water—for several days after birth.

SETONS.

A large and sharp needle, threaded with unbleached tape and saturated with Elliman's, should be passed from the highest point to the lowest and pulled backwards and forwards at least once a day. The efficacy of setons consists in the suppurative action they set up. No better dressing than Elliman's can be employed. To be efficient, it is necessary that setons should be often turned and the dressing renewed.

STAGGERS, STOMACH STAGGERS.

Cause.—Indigestion resulting in disordered circulation in the brain.

Treatment.—Bleeding from the jugular vein, an aperient dose and carefully regulated diet.

SPRAINS IN CATTLE.

The rough handling to which cattle are sometimes subjected, the movement of stock by road, rail, and steamship are all liable to produce sprains, besides injuries which they inflict on one another.

The chief sprains which call for attention are those of the hip, stifle, hock, fetlock, and pastern.

The prominent symptom of lameness arrests the attention of the stock-owner, and his interests will be served best by a careful examination to discover the exact part affected. This is almost all he has to do if provided with a supply of Elliman's Embrocation, since it is an absolute specific for all sprains and like injuries wherever they may be situated. The patient should, if possible, be given a box to himself, as all practical cattlemen know how other beasts will "put upon" a lame member or one that is sick. If a severe sprain, it will be as well to give a cooling dose of, say, a pound of Epsom salts to keep down irritative fever. Then the Elliman's should be well rubbed into the part affected for ten minutes a day, continuing the application to the point of outside soreness. If

the beast is not then quite cured, a day or two may be allowed to intervene, when the Elliman's may again be used until no symptom of lameness remains.

THRUSH IN THE MOUTH (see APHTHA, p. 157).

Cause.—Infection from the tubercle bacillus. Bacteriologists are of opinion that it can only be conveyed by these germs and that it is not hereditary, but many practical observers think otherwise.

Treatment.—Is not likely to be attended by success, and it is probable that before long, new legislation will compel slaughter.

WARBLES.

Cause.—The gad-fly which punctures the skin in order to lay its eggs.

Treatment.—A very little Elliman's is enough for this parasite. It has to be rubbed into the swelling, and in course of time the parasite withers away and is absorbed, the skin regaining its original condition and value, or a little blue ointment (mercurial) applied to the warble will kill the larvæ.

WORMS.

Cattle are more often infested with worms than is usually supposed. These exist in great variety and they occupy many different parts of the unfortunate "host," as the bearer is called in the language of the helminthologist. It would serve no useful purpose here to describe them. Suffice it to say that those with which we may hope to cope successfully are inhabitants of the digestive canal or the bronchi (see HUSK, p. 177).

Tape-worms, round-worms, and the fluke-tribe cause many losses.

Treatment.—Salt is one of those things whose value is generally under-estimated as a cure and as a preventive. It should be given to beasts suffering from worms, daily in the food. Drenching with turpentine and linseed oil has often the

effect of turning out both round worms and the tape varieties: and flukes in the liver seem unable to thrive in an animal so treated, although there can be no actual contact of the drug. It may be that the blood circulating in the liver is so charged with the vapour of turpentine that flukes are unable to live in the ducts which they haunt (see HUSK, p. 177). Ground areca-nut and sulphate of iron are also good remedies, but the great bulk of ingesta in a bullock makes it always more difficult to kill worms than it is in animals whose intestinal canal can be practically emptied by way of preparation for the drugs selected for administration. Recent experiments go to show that the new drug, lysol, is a most valuable vermicide, especially in the case of cattle; its action is quicker and more reliable than the old remedies. It is given in two to four drachm doses mixed with a pint of water.

Prevention.—A liberal supply of rock salt, and the dressing of infected land with salt in autumn; as most of our animal parasites pass an intermediate life in soft molluscs: hence the greater frequency of flukes and other worms on low-lying pastures.

WOUNDS.

Serious wounds are often inflicted upon cattle by the horns of their fellows. Thus there is an increasing preference for the hornless breeds; these, being without weapons of offence, seem also to lose that pugnacity which constitutes one of the reasons that has led to the decadence of the once famous long-horns of this country.

Rushing pell-mell through gates and, it must be added, through barbed wire fences, so much used by the small occupier and dreaded by the huntsman, accounts for many ghastly wounds in cattle.

While the treatment of wounds depends somewhat on their extent and situation, there are certain general rules to be observed, which are more or less applicable to all cases.

To render them aseptic is the surgeon's first care, and this may be done by the cattle owner himself, if he is in possession

of a bottle of Elliman's Embrocation. It mixes freely with water and should, for this purpose, be diluted to the extent of one half and applied with a soft sponge, when it forms a suitable lotion or preliminary dressing as well as a styptic to stop more or less bleeding. The next consideration is to get the edges of a wound in apposition, in order that nature may unite them in the most economical way. By this expression we mean what the old school of surgeons still call first-intention, or adhesive union. Many simple or incised wounds, as distinguished from torn, lacerated, or punctured ones, will unite as though stuck by glue, if promptly brought together and rendered aseptic by the Elliman's properly diluted. Wounds too large to unite without some mechanical means of retaining the edges in apposition may be secured in a variety of ways (see HÆMORRHAGE, pp. 174-176).

Probably, for the cattle-man, we may most recommend the plan of pins, and figure-of-eight bandaging. Suitable pins may be purchased, or made, by filing stout pins on three sides to make a bayonet-shaped end or point. These should be boldly pushed through the sound skin, taking plenty of hold to avoid their tearing out. Tow or a strand or two of untwisted string can then be wound round in the form of the figure-of-eight. This method is the least likely to allow the wound to gape open; it has the recommendation of permitting the amateur to renew his bandage without having to introduce fresh sutures. The swelling can be relieved without withdrawal of the pins, and the whole apparatus be rendered free from germs by the application of the dilute Elliman's all over the dressings, in the proportion before recommended.

Ragged or contused wounds tempt the amateur to cut off what appears to him superfluous skin or flesh, but the experienced surgeon will save all the living material possible, only excising the hopeless portion when he is convinced that nature cannot make use of it in repairing the breach.

The same directions as to bringing the edges of a wound together apply to this class also; but it is even more important

to use an antiseptic dressing, as we cannot expect contused wounds to heal by simple adhesion, and the longer exposure to atmospheric germs makes it the more desirable to keep the open sore dressed with an efficient germicide such as Elliman's.

The discharge of a thin straw-coloured fluid is not a healthy sign, and should such symptoms appear, a dressing of undiluted Elliman's should be employed, pressing it within the wound or plugging it with a piece of tow, and repeating the performance until thick yellow matter denotes a healthy granulation going on within.

Excessive swelling in the neighbourhood of a wound may be an untoward sign and should be disposed of by counter-irritation, brought about by the undiluted Elliman's being applied liberally for several inches around the actual wound.

Punctured wounds call for remark here, as they are too often regarded lightly, because they are small. A great gaping wound is often less to be feared than one made by the point of a horn or the prick of a nail. Such wounds have an unpleasant way of apparently healing up while mischief is going on within. A fistula may be forming, such as causes poll evil in horses and is known to most horsemen. A punctured wound should not be allowed to heal up as it will, but be slightly enlarged to give vent to the matter which usually forms. A plug of tow-end should be dipped in neat Elliman's, and forcibly pushed up as far as it will go; this will ensure a proper discharge, and preclude the possibility of a sinus or fistula being subsequently established. It will come out in a few days, by reason of the matter which is formed. A blunt penholder or other homely probe will tell the state of the wound if it is pushed up. A bright red drop of blood on the probe indicates sound healing by granulation, while a watery fluid with granules in it like those from a stale cow's udder, shows a disposition to the formation of fistula. A neglected case may still be saved by the plugging previously recommended.

YEW POISONING.

Why cattle should occasionally yield to the temptation to eat this poisonous plant is a mystery. They may live on a farm

where it grows for years without touching it, and then suddenly becoming possessed of the same idea, a number will eat thereof and die.

Treatment.—Yew being a narcotic poison, the best treatment is to immediately administer a rousing stimulant and to follow it with a dose of linseed oil, as the properties of the yew seem to be somewhat masked by oil, and repeated doses help to clear the canal before more of the plant is digested. Stimulants in gruel at regular intervals offer the most hopeful plan of treatment.

Prevention.—Have no yew trees. Cattle cannot well be kept from eating them, as their presence on your lands or your neighbours' is sure to be forgotten, or a new man is employed to lop the overgrowth, and the branches fall into a field where cattle are kept.

CARE OF CATTLE.

The first step in civilization was made by the herdsmen, we are told, and we may add that the methods pursued by many are still very primitive. Between coddling and carelessness there is a happy mean.

The cattle of these islands are the best, and all nations come to us to renew their blood-stock. The variations of temperature, though frequent, are seldom extreme, and this perhaps engenders carelessness on our part in the housing of cattle not intended for show, or belonging to such delicate breeds as those of the Channel Islands.

Air.—Extreme changes of temperature do not so much affect the breathing organs as does the quality of the atmosphere inhaled.

The removal of a cow from a town-shed to the country, and *vice versâ*, is effected in one day, and no thought, as a rule, is exercised as to the change affecting her health until something the matter is discovered. As regards air-space it is now pretty generally accepted that 800 cubic feet of air is necessary to each adult animal, but we may remark in this connection that the

amount of oxygen contained in the same space is by no means comparable in London, and on, say, the South Downs. If, as expected, legislation is to regulate the air space, the authorities should differentiate between town and country.

Water.—Rain water is preferable to any other if it can be kept sweet. The water of many districts contains lime, and the formation of stones and other troubles result. Again, in other districts the streams are polluted by manufactories, or there is lead in the soil over which the water-courses run, either above or below ground. Well water is colder than the atmosphere in summer, and therefore a source of colic and other digestive troubles. Pond water receives all sorts of polluting material, from the tramp's typhoid germs, to the red water from the cow who will often pass it, if driven in when the owner wants to see if she has the disease.

If farm buildings are properly provided with gutters, a vast amount of rain water can be saved and will keep sweet in open tanks. Animals frequently prefer the coffee-coloured water into which the yard drains pass more or less tribute, and they appear to be none the worse until some disease breaks out which cannot be traced. Then it is found that the germs of disease have been accidentally introduced. A sheep with the first symptoms of anthrax may drink from the pond, or fall in when dead from its use. A bucket will be dipped into it after it has been used to wash the hands of the man who has opened a pig that died from swine fever. So many sources of possible contagion might be pointed out, but we have said enough to show the danger.

The quantity of water which is estimated to be necessary for a bullock, on board ship, is eight gallons per day; but on land, the temperature and other things have to be taken into consideration. The milch cows which give five gallons of milk a day must, of course, need more, and the fatting steer tied up and getting scalded stuff and moist rations will need less.

Feeding.—The ox, being a ruminant, requires a large amount of time in which to repose while he brings back the food he has gathered, and which is only partially prepared for digestion.

Long stuff is a necessity; it is no use to give the most nourishing food unless there is also bulk, as the animal cannot get his cud or digest without a certain amount of distension.

Frosted roots should not be given, neither whole ones, but it is safer to give them whole than halved or not properly sliced into such portions that they cannot be a cause of choking.

Drainage.—Surface drainage is the best. All the refuse can be seen, and the dung removed from it before it has time to undergo chemical changes. The liquid portion of the manure is most valuable and should be received into a well outside, provided with a chain pump.

Warmth.—The colder the weather the greater expenditure of food there will be in keeping up the animal heat, the temperature of a bullock being always the same, whether in winter or summer. The apparent difference is only on the surface. Animals kept in a cold, draughty shed will require more food to produce the same results than those do which are confined in a warm stable. A knowledge of this fact induces many dairymen to go to the other extreme and keep the stable too hot by overcrowding.

Shelter.—Pastures where there are no trees are, in summer, very trying to cattle who can get no respite from the flies, nor a comfortable situation in which to lie down and chew the cud. Some sort of a rough shanty should be put up for their protection from the summer's sun and winter's wind, unless they are got in during the day when the weather is unsuitable.

Cattle have a marvellous capacity for accommodating themselves to circumstances, and become able to bear all sorts of neglect and ill-usage, but they do not give the same return, and a good farmer will provide his cattle with all the comfort he can.

Driving.—The morning is the best time for animals to travel by road, and they should neither be heavy with a big feed, or so hungry as to waste time and strength in searching the road sides for the rubbishy stuff that usually grows there. Water is the chief requirement on the road, as the exertion is unusual and extra water is wanted.

Gentle Handling.—Rough treatment does not pay, and the boy or man found too fond of using a stick, ought to have nothing to do with cattle. Many cows will give more milk to a woman, and the reason is probably to be found in her more gentle manner.

Drenching.—While horses should be dosed with small quantities at a time, cattle take their medicine better in one or two "swallows" or "go-downs." The horn or bottle should be made to touch the roof of the mouth before any of the contents are poured into it, as it gives warning of something coming, and the glottis closes over the windpipe. A bullock will never be choked by a "drink" if this precaution is taken.

Putting the fingers into the nose is an objectionable way of holding any but a vicious beast, and quite unnecessary. The finger-nails wound the tender membrane, and they make the animal dread the next dose.

Milking.—This operation should always be performed at the same hour morning and night, and the udder "stripped" clean, or a diminished supply of milk will be the result and the cow go altogether dry before her time.

MEDICINES TO KEEP IN STORE.

Where the services of a veterinary surgeon cannot be obtained, it would be advisable to keep the following preparations in store :—

PURGATIVE DRENCH FOR CATTLE.

Sulphate of Magnesia	1 pound.
Gentian Powder	½ ounce.
Ginger Powder	½ ounce.

To be given in a quart of warm ale or gruel.

TONIC AND STOMACHIC DRENCH FOR CATTLE.

Gentian Powder	½ ounce.
Ginger Powder	½ ounce.

To be given in a quart of warm ale or gruel.

FOR SCOURING IN CALVES.

Prepared Chalk	2 ounces.
Catechu Powder	1 ounce.
Ginger Powder	4 ounces.
Opium Powder	1 drachm.
Water	1 pint.

Dose, one to two ounces night and morning.

In districts where the undermentioned substances cannot be readily obtained they should be kept in store. The quantity of each likely to be required would depend on the amount of stock kept.

Linseed Oil.	Spirit of Sal Volatile.
Castor Oil.	Sweet Spirit of Nitre.
Spirit of Turpentine.	Tincture of Opium.
Oil of Tar.	Sulphate of Magnesia.

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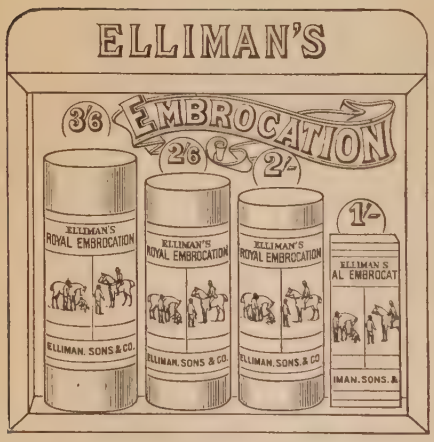

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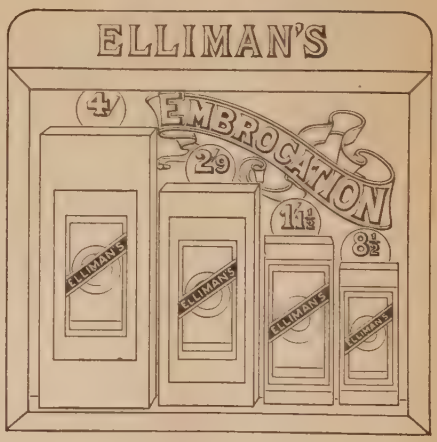

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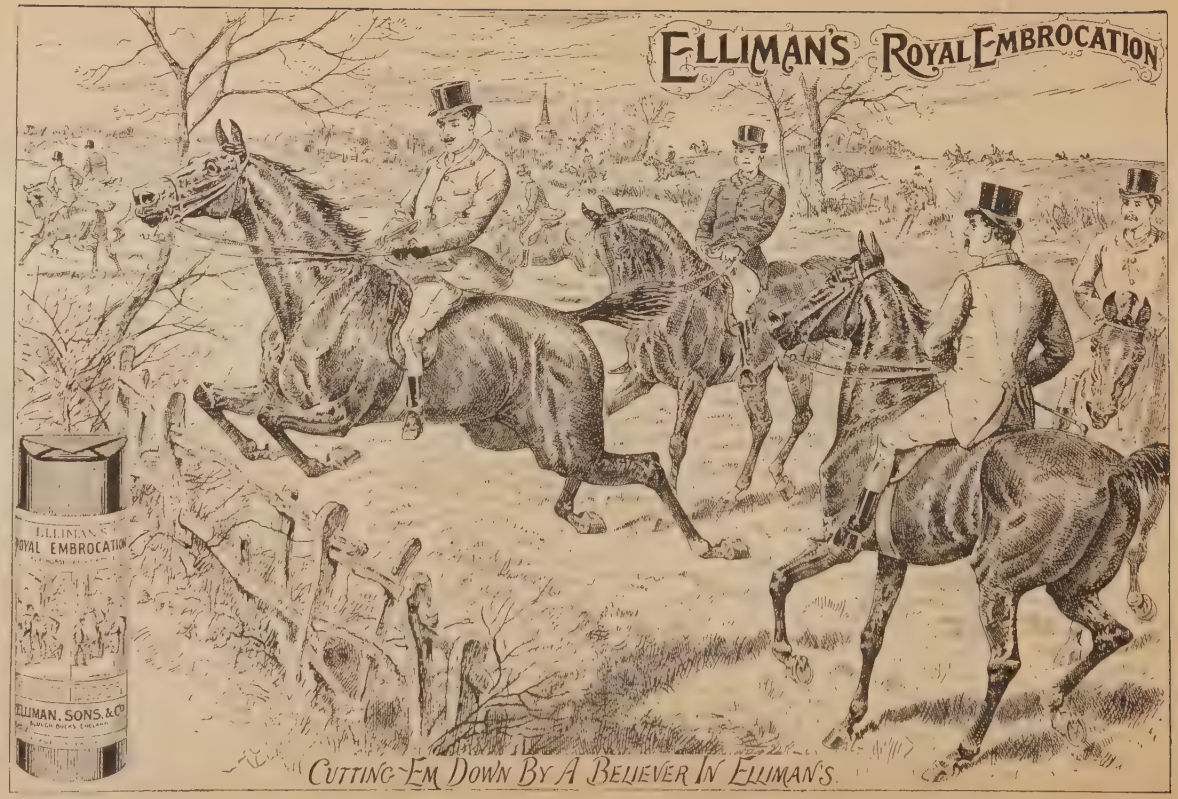
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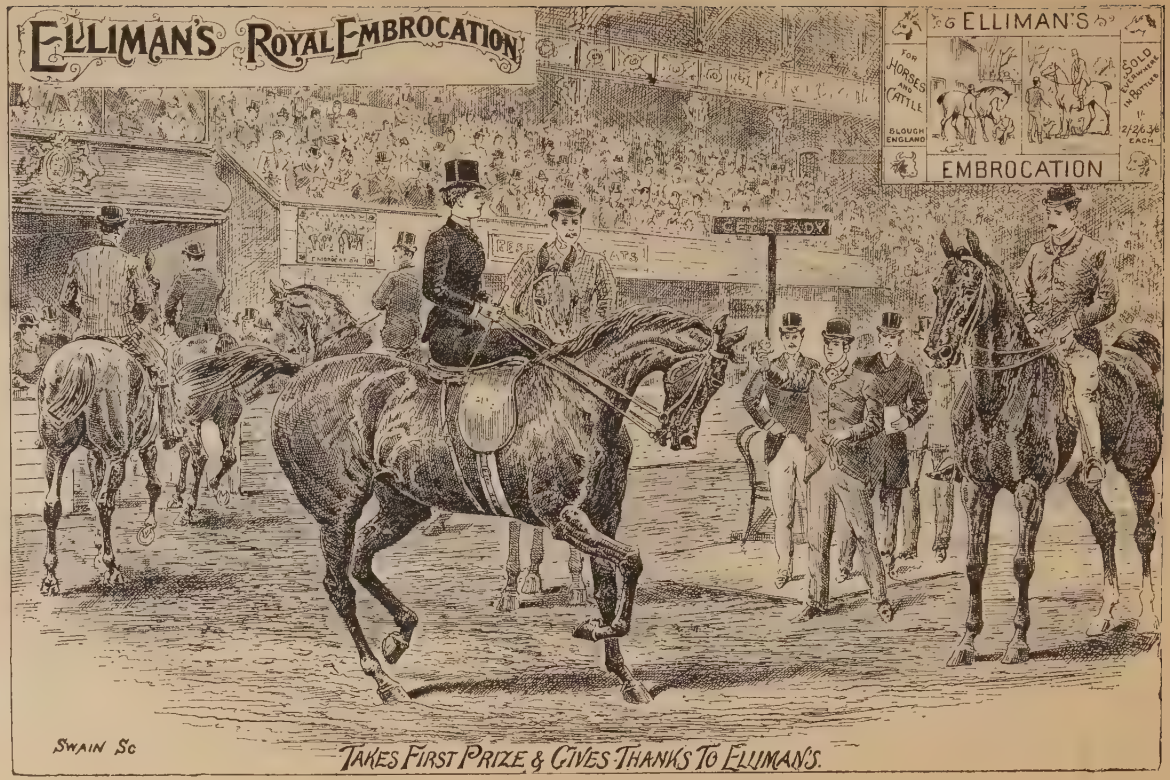
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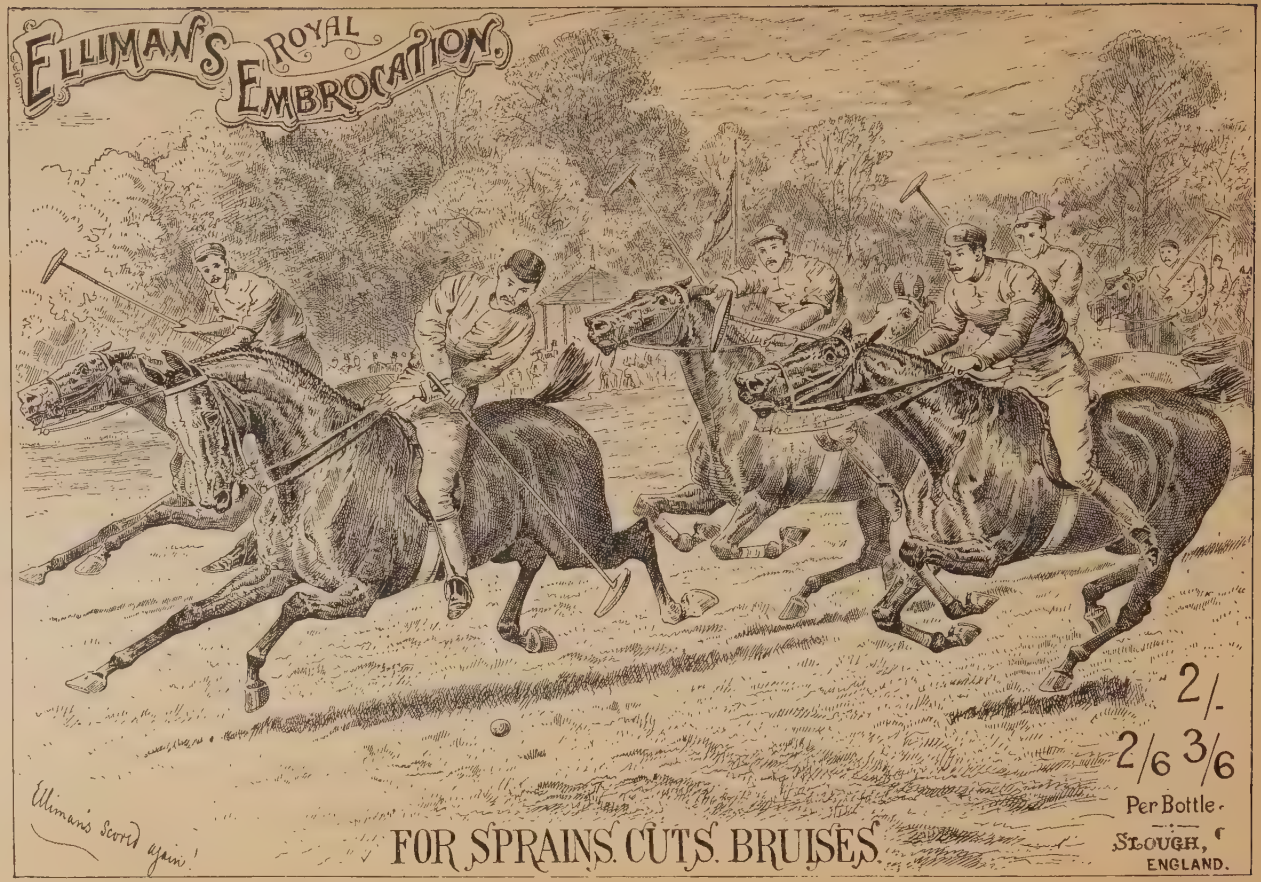
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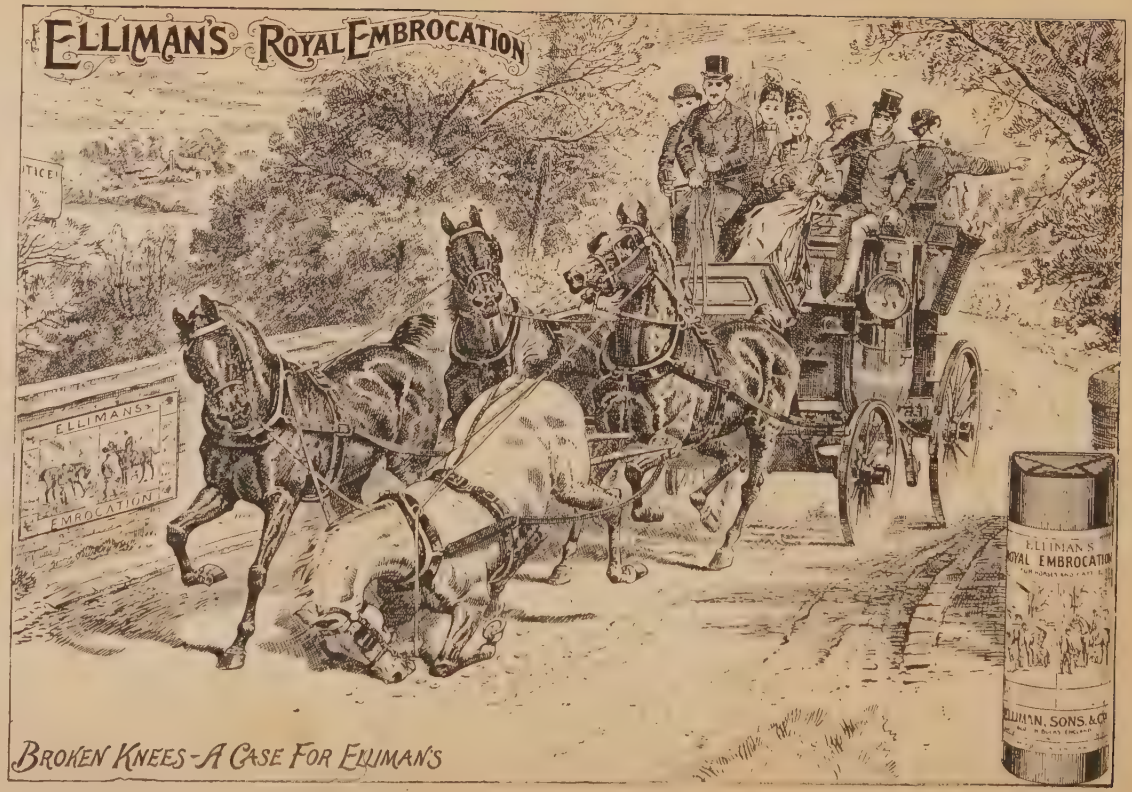

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